An investigation of Learner-Centered Education in a large class developing country setting: Evidence from Lilongwe, Malawi

By

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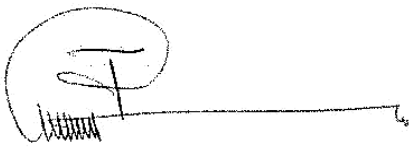
Declaration

I, **Jeremiah Mpaso** declare that this dissertation is my original work and that all information borrowed from other authors and sources is duly acknowledged. It is submitted for the fulfilment of Master of Development Studies Degree in the Faculty of Humanities, School of Built Environment and Development Studies, University of KwaZulu-Natal, Durban, South Africa. This work has never been submitted for any degree or examination in any other University.



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Abstract

The study investigated the implementation of Learner-Centred Education (LCE) in a larger class defined as having more than sixty learners. LCE requires learning to be participatory, active, reflective, and thought provoking. As such, the study undertook the task to examine the learning practice in a large class so as to establish the true situation in relation to the expectations of LCE. To achieve this objective, sixteen Participants to the study comprising teachers, education advisors and an inspector of schools were engaged in in-depth interviews on their experience in implementing LCE. Results showed that effective implementation of LCE in a large class environment is practically very challenging. Teachers fail to provide individual support to learners, they have limited teaching methods that engage all learners in active learning, and learners' assessment is done periodically to avoid high workload of assignments from a larger group of learners.

The study found that teachers are not adequately trained in handling large classes during their teacher training program. In the course of teacher training program, special and smaller classes of sixty learners (that is an officially normal class size in Malawi) are created for student teachers during teaching practice. However, the arrangement does not correspond to the daily situation of class size in the schools. Therefore, the teacher training and continuous professional development programs should embrace challenges faced in implementation of LCE. Teachers require specialized knowledge and skills in handling large classes. Lastly, the study calls for more studies in classroom environments with smaller numbers to further investigate the extent to which class size impacts on student performance.

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To God be the Glory and Honour.

Dedication

I dedicate this work to my lovely son Joshua Mpaso whom I left to pursue this two-year program when he was only three months old.

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List of used abbreviations and acronyms

LCE:	Leaner-Centred Education
CPD:	Continuous Professional Development
TALULAR:	Teaching And Learning Using Locally Available Resources
ZIG:	Zonal Improvement Grant
SIG:	School Improvement Grant
EFA:	Education For All
FPE:	Free Primary Education
PCAR:	Primary Curriculum Assessment and Review
HDI:	Human Development Index
UPE:	Universal Primary Education
UNESCO:	United Nations Education Scientific and Cultural Organization
MGDS:	Malawi Growth and Development Strategy
MDGS:	Millennium Development goals
PIF:	Policy and Investment Framework
ESDP:	Education Sector Development Project
MoJCA:	Ministry of Justice and Constitutional Affairs
JICA:	Japanese International Corporation Agency
EGRA:	Early Grade Reading
SMASSE:	Strengthening Mathematics, and Science in Secondary Education
MoEST:	Ministry of Education Science and Technology
TVAAS:	Tennessee Value-Added Assessment System
INSERT:	In-Service Training
TDC:	Teacher Development Centre
HIV:	Human Immune Virus
AIDS:	Acquired Immune Deficiency Syndrome
IPTE:	Initial Primary Teacher Education

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CHAPTER ONE: INTRODUCTION AND BACKGROUND

1.1 Introduction

This chapter sets the background of the study by introducing the context from which Learner-Centred Education (LCE) emerged. LCE emerged as a response to the demand for achieving quality education in developing countries. It also sets the large class size environment as a specific context from which the topic is investigated. Further to this, the chapter presents the problem statement investigated and the research objectives set as targets to be achieved. Finally, the chapter highlights the structure and arrangement of the study.

1.2 Education and the development agenda

The education system all over the world has experienced radical change due to the demand for its alignment to practical development needs at all levels of society. This comes in light of education being a major driving factor and foundation for all sectors of development (Tilbury, Fien, and Schreuder, 2002). As such, investment in education is a catalyst to the creation of a productive human resource that can stimulate economic growth and development (McGrath, 2010). The focus on education's role in national development goes beyond basic education and includes investment in higher education as well. Higher education is necessary for 'scientific and technological advancement while basic education concentrates on literacy and numeracy' (Chimombo 2005; 129). Basic education facilitates understanding and synthesis of new knowledge that is critical to various sectors of development. The association of education and its contribution to the labour market has affected the education policy development and education structure worldwide. Therefore, the global development agenda has totally changed the platform for survival, making education advantages go beyond family and household survival to a community and national importance.

The United Nations Educational Scientific and Cultural Organization (UNESCO) is the global coordinating body with a mission to oversee and promote investment in education. Education in the context of sustainable development is reflected in the United Nations action plan on Environment and Development popularly known as the Agenda 21. The Agenda 21 recognizes the critical role education plays in building the capacity of people to respond to the environment and development problems (Sauvé, 1996).

1.3 Education in developing countries

Education in developing countries is a diverse and extensive system due to social, economic and cultural complexity. Its outcomes are influenced by family background, structure, inequalities, and learning achievements (Buchmann and Hannum, 2001). Developing countries face a challenge of having many out of school children. There are also inadequate teachers and material resources like textbooks and learning infrastructures (Glewwe and Kremer, 2006). Education in developing countries have a higher social and economic return in the lower grades of primary education hence greater investments geared towards access to basic education. For example, Latin America and the Caribbean registered higher returns in lower levels of education under primary education (Psacharopoulos and Patrinos, 2004). As such, to achieve higher returns in education, most developing countries concentrate on funding and investment in basic education (Moretti, 2004).

Basic education became a much-focused area at the 1990 World Conference on Education for All where the Jomtien Education for All (EFA) goals and the framework for educational reform emerged. The EFA goals advocated for universal access to education to meet the basic learning needs in literacy, oral expression, numeracy and problem solving (Kitamura, 2009). The educational reforms exist at systems, methodology and administrative levels and target quality, access, and efficiency. In ensuring quality education, countries made a shift from traditional pedagogical teaching to leaner-centred teaching reflected in their curricula reforms. However, recognizing access to education depends on a combination of factors like availability of learning infrastructures, provision of instructional materials, and parent's ability to meet other education-related costs like writing materials and food.

The period after the declaration of EFA goals saw countries in Africa including Malawi introducing Free Primary Education. For example, Ethiopia developed the Education Sector Development Project (ESDP) in 1997 (Lasonen, Kemppainen and Raheem 2005), Kenya re-introduced the 1978 free primary education in 2003 and Tanzania introduced partial FPE through the 1973 Musona Declaration (Orodho, 2014). In 2001 it was completely made free as part of the Poverty Reduction Strategy Program (Riddell, 2003). Uganda made similar commitments by passing the Universal Primary Education (UPE) policy in 1997 but limited it to four children per family (Okuni, 2003). Zimbabwe adopted the idea of education for all in 1980 at independence considering that pre-colonial education was mainly white-dominated and this was a matter of equalization of education opportunities between blacks and the

whites (Kanyongo, 2005). Zambia declared free primary education for all pupils in 2002 (Kemp, 2008; 50), Lesotho introduced free primary education in 2000 and changed the landscape of education policy thereafter (Urwick, 2011; 236). Finally, Malawi adopted free primary education in 1994 where school fees were abolished together with the compulsory wearing of school uniform (Kadzamira and Rose, 2003).

1.4 The situation in Malawi

In order to successfully operationalize FPE, the education Policy and Investment Framework (PIF) was introduced in 1995. Despite PIF undergoing periodic reviews, investment in quality and relevance of education remained one of the major challenges (MoEST, 2015). The periodic reviews of PIF indicate government's attempts to broaden the platform for accessing basic education by all children regardless of their social status. Such attempts resulted in high enrolment rates thereby creating large and overcrowded classrooms. Through the Malawi Growth and Development Strategy (MGDS), prioritization and concentration on attainment of basic skills and competence is acknowledged as a recipe for active citizen participation. The MGDS target of improving learning expectations, demands increased investments in ensuring quality education and curriculum relevance to meet the practical needs of the society (Chimombo, 2009:299). The declaration of free and compulsory primary education signifies Malawi's commitment to ensure that the legal framework solidifies government commitment to increasing access to basic education (MoJCA, 2013; s.13).

Free primary education, led to an increase in the general enrolment rate which invoked resource challenges, shortage of qualified teaching staff, high pupil-teacher ratios, and inadequate textbooks. Other challenges related to school organization include ineffective supervision, limited individual support to learners, level of learner participation and class activeness, classroom behavioural management, and choice of teaching methods. Therefore, free primary education created the demand for improved quality of education. Hanushek (2013) argues that without improving quality, developing countries will find it hard to earn the most of returns from education and fail to close the gap with developed countries. Schweisfurth (2011) argues that beyond the benefits of education to the individual, LCE facilitates the return of education as the foundation for the building of democratic citizens and societies. It also helps in the development of a skilled population in readiness for future knowledge economies. LCE is conceptualized as a better approach to improve quality of

education in Malawi and other developing countries in the context of increased general enrolment, leading to large and overcrowded classrooms.

1.5 Challenges in implementing LCE in Malawi

In response to the demands for implementing LCE, the Malawi Primary Curriculum Assessment Review (PCAR) of 2001 incorporated learner-centred education approaches in the pre-service teacher training curriculum (JICA, 2012). The review reduced subject workload to give more time to learning and recognizes the learner as an active participant of the learning process. However, the implementation of LCE faces challenges of inadequate teaching and learning resources, teacher's skills and capacity levels on LCE pedagogy and high class size.

A large class has a multiplier effect that brings up several challenges to effective facilitation of learning. For example, a class with too many learners usually is overcrowded and limits the teacher-pupil interaction. Such a limitation reduces personal contact with learners as the teacher struggles to know all of them by name. Knowing learners by names improves learner recognition and supports the teacher's ability in checking individual weaknesses and strengths in order to determine the appropriate help. When learners fail to get attention from the teacher they remain distracted from the learning process and the waiting period turns into disruptive behaviour or non-productive activities (Opolot-Okurut, Nakabugo and Masembe-Ssebbunga, 2015). For example, learners fail to complete assigned tasks because they know the teacher would not have time to check their work. This, in turn, leads to challenges in classroom behaviour management and reduces teacher's instruction time. The teacher spends part of the time instilling discipline among learners at the expense of lesson instructional delivery. Further to that, non-instructional and classroom administrative tasks like checking attendance registers are time-consuming. This forces the teacher to work more hours outside the classroom on homework assignments, tests and examination scripts thereby increasing teacher burn out.

Implementation of LCE in a large class requires more teaching and learning resources to facilitate active learning. When the class is large, getting enough teaching and learning materials becomes difficult and learners end up sharing the use of the available resources where possible. In situations that sharing the use of teaching and learning resource is more difficult, teachers use the resources to demonstrate to the whole class thereby resorting to 'wholesale' teaching that regards the whole class as homogeneous. The teaching process

becomes tedious and teachers concentrate on the active and bright learners to catch up with allocated time for the lesson. Therefore, limited teaching and learning resources in a large class affect the implementation of LCE (Benbow, Mizrachi, Oliver and Reschly, 2007; Opolot-Okurut et al., 2015).

Mizrachi, Padilla and Susuwele-Banda (2010), acknowledge that introduction of free primary education increased the number of learners per class and this increase affected the effective implementation of learner-centred approaches. The study by Mtika and Gates (2010) on LCE pedagogy in Malawi agrees that a large class affects the formation of small groups that promote active learning by all learners. It also creates a shortage of space and resources thereby limiting the teacher's choice of instructional methods. Chiphiko and Shawa (2014) found that teachers handling large classes fail to stimulate learner's interest in the lessons and arouse their curiosity, critical thinking and problem-solving. Therefore, a large class limits the teacher's role as a facilitator of active learning which in turn affect the implementation of LCE in Malawi.

1.6 Large class size context setting

The concept of a large class varies in developed and developing countries. Ehrenberg, Brewer, Gamoran, and Williamns (2001; 2) defines class size as *'the actual number of pupils taught by a teacher at a particular time. It is the number of pupils who are physically interacting with the teachers and among themselves'.* In further distinguishing class size from the pupil-teacher ratio, Ehrenburg et al., (2001) explains that pupil-teacher ratio includes teachers serving as administrators, librarians, and other special education support staff. Malawi conceptualizes class-size as the permanent pupil-classroom ratio and pupil-classroom ratio. Permanent pupil-classroom ratio includes all pupils enrolled for the class regardless of their attendance frequency while pupil-classroom ratio only focuses on pupils who frequently interact with the teacher in class (MoEST, 2015). The extent of acceptable class size depends on the level of education development. Globally, the ideal class size is considered to have a maximum of 35 learners under the support of one teacher (Hanushek, 2013; Jepsen and Rivkin, 2009; Rockoff, 2004). However, in some developed countries, a normal class size is 15-20 students per class while in medium and low-income countries like South Africa, Namibia, Uganda, Tanzania, and Ghana a normal class size is 35-45 students (Lee and Zuze, 2011; Motshekga, 2012; Phurutse, 2005). Therefore, a large class in this study refers to class

where the number of learners exceeds 60 as provided for in the Malawi National Education Sector Plan for 2008-2017 (MoEST, 2008).

However, realities on the ground sometimes prove contrary to the national average picture of class size. For example, in Iran, a teacher handles about 70 students at a time (Karimkhanlouei, Rahbar and Bayat, 2013). In Eastern Cape, South Africa a teacher handles 140 students in one class (Davis, 2013) and in Malawi a teacher handles 174 students in one class (MoEST, 2015).

1.7 Problem statement

The goal of improving quality of education is one of the priorities education reform has set. In response to this, the system has witnessed various programs targeting implementation and policy change. At the secondary school level, much effort has been put into Strengthening of Mathematics and Science in Secondary Education (SMASSE). However, at the primary school level, the introduction of Primary Curriculum and Assessment Review (PCAR) in 2001 formed the basis for other programs like the Early Grade Reading (EGRA) and the National Reading Program (NRP). In order to ensure teachers' professional development to effectively implement LCE, the Zone Improvement Grant (ZIG) and School Improvement Grant (SIG) were introduced to support teachers' Continuous Professional Development (CPD), and requisition of teaching and learning resources. However, the system remains hampered by large classes due to a shortage of teachers and learning infrastructures (MoEST, 2015). Therefore, size of the class either facilitates of impedes the implementation of LCE. Studies have been conducted on how teachers implement specific learner-centred teaching strategies on specific subjects (Kaphesi, 2017; Maonga, 2017; Mdolo, 2017; Msukwa, 2017, Yaya, 2017). This study was conducted to investigate the feasibility of LCE in a large class context focusing on the teachers' classroom practice regardless of subject to relate LCE theory to practice. The study motivation comes from the understanding that LCE theory assumes a normal class situation with not more sixty learners in the context of Malawi when the reality on the ground shows that classes are larger than expected (MoEST, 2015).

1.8 Research Objectives

The study's main aim is to investigate the feasibility of implementing LCE in a large class with more than sixty learners under the control of one teacher as stipulated in the Malawi National Education Sector Plan for 2008-2017 (MoEST, 2008). The investigation will help to

establish the extent to which LCE is implemented in the context under study and identify areas that need support for effective implement LCE in a large class environment. The specific objectives of the study are:

1. To explore teachers' understanding of LCE
2. To inquire on teaching methods that support the implementation of LCE in a class with more than sixty learners
3. To investigate the experiences of teachers in implementing LCE in class with more than sixty learners
4. To explore suggested solutions to the effective implementation of LCE in a class with more than sixty learners

1.9 Research questions

1. What do teachers understand of LCE?
2. What learner-centred teaching methods are frequently used in a class with more than sixty learners?
3. What are the experiences of teachers in implementing learner-centred education in a class with more than sixty learners
4. What should be done to ensure that learner-centred education is effectively implemented in a large class environment?

1.10 Research methodology and instruments

Responses to the research questions were provided through in-depth interviews and lesson observation. Much detail on the approach and methodology is discussed in Chapter four.

1.11 Structure of the dissertation

The study is arranged into eight chapters. The first chapter presents an introduction and background to the study and the problem researched. It also highlights the objectives of the study. Chapter two presents a review of the available literature on LCE and its implementation challenges. Chapter three is a description of the theoretical framework from which the study is drawn. Chapter four focuses on data and methodology and a description of the study design. It covers sampling, data collection and data analysis. Chapter five is the analysis of data collected from the field research that engaged participants in in-depth interviews. Chapter six is the presentation of discussion and interpretation of data analysis presented in chapter five. Chapter seven includes the study conclusion and recommendations

to the Ministry of Education Science and Technology in Malawi, the school leadership and supervisory sections. The final chapter eight is a list of references used in this study

1.12 Summary

The chapter has underscored the role of education in the development agenda as the catalyst for every aspect of development. As such, it has argued that quality and relevance of education are the two key components that support sustainable development. Therefore, in order to ensure that education systems in the developing countries meet quality and relevance, LCE becomes the preferred and much focused approach in the current education trend. However, resource challenges and high enrollment rate due to the introduction of free primary education emerge to be some of the challenges with multiple effects on the effective implementation of LCE in developing countries. One such multiplier effect is the increased number of learners in a class thereby creating a large and overcrowded classroom. The study, therefore, focuses on investigating the feasibility of implementing LCE in this large class setting.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of available literature on the situation of education in developing countries. The situation presents the need for improving quality and relevance of education to which LCE emerges as a response approach. LCE presents a shift from traditional teacher-centred approach to learner-centred approach that ensures active, participatory and discovery learning. The review draws from the constructivist learning theory to explore how LCE assist the learner to be at the centre of the teaching and learning process. Investigating implementation of LCE requires breaking up the content of LCE which is done through a review of its principles. As such, this chapter presents a review of literature on LCE principles to give a better understanding and coverage of the content under investigation. The focus is limited to the relationship between policy and practice and does not attempt to assess its contribution to learner's performance and achievement. The chapter further analyzes the available evidence of implementing learner-centred approaches in various contexts taking into account class size as the major factor that either facilitates or hinders its effective implementation.

2.2 Education in developing countries

Education in developing countries is affected by learning environment, social status and family context (Buchmann and Hannum, 2001). Education in developing countries has experienced an increased enrollment rate since the 1960 when most countries attained their independence thereby opening up education to all people (Glewwe and Kremer, 2006). High enrollment has resulted in lowering of education standards and Hanushek (2013) underscores the need to improve the quality of education in order to narrow down the gap with developed countries. Education in the developing world is characterized by resource constrains in human, financial and physical resource. Achola and Pillai (2016) in the study on challenges of primary schooling in developing country setting in Kenya found that most developing countries face challenges of high school dropout, grade repetition and lack of community engagement for child education. Chen (2014) describes the classroom size, as one of the factors that challenges access to education in developing countries education setting.

Creese, Blackledge and Takhi (2014) specifically looked at the colonial background of education in Africa that resulted in changing the medium of instruction to foreign languages. He therefore emphasized on the need for complementary and equitable application of other

languages alongside foreign languages as medium of instruction in education. He argues that this would enhance realism of education in local context that is more meaningful to getting higher educational return from the process.

One of the strategies developing countries have undertaken to improve the quality of education is establishing partnership with other stakeholders who include international development partners like the World Bank, the European Union and the other International Non-Governmental organizations (Chimombo, 2005). The partnership has seen a donor response through increased funding for educational support through teacher training, infrastructural development, teaching and learning resource requisition, and policy and curriculum reviews. This in turn has contributed to increasing access to education and leading to an increase in enrolment rates (Birchler and Michaelowa, 2016). Local education structure need to be responsive to the high enrolments otherwise they pose a great challenge to policy practice (Handa, 2002).

2.3 The emergence of learner-centred education

Schweisfurth (2011), in researching about LCE in a developing country context discovered that from the late 1980s to early 1990s, LCE has been a recurrent theme in many national educational policies in the global South. It has also enjoyed a wide donor support through smaller programs and localized innovations. Education that revolves around the learner imparts necessary skills for personal, community and national development. However, the history of LCE is overshadowed by stories of failure. LCE was developed in the context of achieving curriculum relevance to context-specific needs and improving the quality of education.

For the past three decades, international donors have worked in Sub-Saharan Africa by encouraging the adoption of learner-centred pedagogies. The approach construed as western model attempts to move away from teacher-centred, didactic, chalk and talk to inquiry-oriented and understanding discourse. Therefore, in making LCE work, Guthrie developed the continuum of teaching styles and Schweisfurth developed the minimum standards rubric (Lattimer, 2015; 66). These frameworks have contributed to debates and conversations around LCE reforms both at policy and curriculum level. This has also led to an emergence of numerous studies around the implementation of LCE. However, despite these frameworks, a teacher selects approaches that work in particular context

Schweisfurth (2011) analyzed 72 articles on LCE from developing countries with only one from the United Kingdom because they were not accustomed to LCE. In all the 72 articles, Schweisfurth failed to get profound evidence of where and how LCE is best implemented. A considerable extent of work is also recorded in Poland with the post-communist education agenda. Research in LCE has been conducted from pre-school through primary to college and universities and non-formal adult education. These studies in LCE have focused on exploring issues and problems of its implementation in particular settings. Such problems include the nature and implementation of education reform, human and materials resource, interaction of divergent cultures, and the power and agency of implementation.

O'Sullivan (2004) argues that most research is small-scaled, qualitative and based on interviews or occasional questionnaires, lesson observations, ethnography and action research. O'Sullivan then encourages research on LCE to include classroom observations in order to understand the actual teacher-learner classroom interaction. He stresses that reliance on teacher's view only limits apprehension of the real classroom implementation of LCE as teachers explain much on their understanding of the approach than the practice. Teachers and local school administrators are accused of being unable or unwilling to implement the reforms and instructional practice (Lattimer, 2015). To this effect, Seng (2014) argues that teachers should not be blamed for lack of will to make meaningful change in the LCE because the approach may not be suitable for developing countries where classroom environment is hard to manage due to large number of learners and limited teaching and learning resources. Developing countries are characterized by limited resources, different learning cultures and large classes.

The Tennessee study project of class size and student performance indicates that class- size has an influence on the choice of teacher instruction and individual support to learners (Mosteller, 1995). The Tennessee class size project is one of the most foundational studies in the field of education outside developing country setting. The project has opened more avenues for further research on the relationship between class size, teaching instruction and student performance. LCE aims at getting a higher education return from a resource-constrained and large and overcrowded classroom environment common in many developing countries.

2.4 Conceptualization of LCE

Available literature uses different terminologies to describe LCE. Learner-centred is described as an active-learning pedagogy (Mizrachi et al., 2010), student-centred approach (Marinko, Marinko, Hughes and Rees, 2016), learner-centred approach (Chiphiko and Shawa, 2014), learner-centred education, (Mahlobo, 2013; O'Sullivan, 2004; Pillay, 2002; Schweisfurth, 2013a), learner-centred teaching (Boyadzhieva, 2016), and student-centred learning (Seng, 2014). This study, however, uses LCE to align it with the current program running in the primary schools in Malawi. Learner-centred education induces active-learning pedagogies and has generated much interest in the international development community. It is not just enough to register a high enrollment rate but also to ensure that children receive an education that is relevant and of high quality.

Therefore, learner-centred approach places the learner in a social context where they can construct meaning in an active and participatory manner. However, it should be acknowledged that shifting from teacher-centred to learner-centred teaching has not been easy especially for teachers who have been in the service for a long time and are used to the traditional methods.

Learner-centred education regards knowledge construction as an individual process whereby the teacher exists as a facilitator of achieving meaningful learning. Therefore, LCE is a process of teaching and learning where classroom activities rely on the learner as an active participant and a major player. The teacher motivates the learner to get interested in the process. Learning focuses on discovery and formation of knowledge and its construction in own understanding (Schweisfurth, 2013a). Learners' needs, capacities and interests shape the learning process. LCE gives the learner a relatively high level of active control over the contents and processes of learning (Schweisfurth, 2013b). This control helps the learner build up from existing knowledge and meaningful patterns, which lead to more effective and sustainable learning. Learner-centeredness is associated with active learning; the design and delivery of instruction consider learners needs (Pillay, 2002).

LCE does not imply leaving the responsibility to learners but facilitating the learning process with the learner as an active actor and the teacher as a facilitator. Marinko et al. (2016; 5) emphasize, *'student-centred classroom is not a place where students decide what they want to learn and what they want to do. It is a place where we consider the needs of the students,*

as a group and as individuals, and encourage them to participate in the learning process all the time'. Marinko et al., (2016) further explains that learner-centred pedagogy shifts the focus from teaching to learning, a factor that shifts power balance from the teacher to the learner. This occurs because LCE emphasizes on independent, self-directed interaction with presented activities. Marinko et al., (2016) describe self-discovery learning as very influential to behavioural change.

LCE shifts the focus of instruction from the teacher to the student (Schuh, 2004). The shift provides opportunities for learners to draw on their own experiences and interpretations of the learning process. As such, learner-centred instruction regards learning as a life-long process rather than a one-off encounter. LCE is rooted in the ideological framework that views learning as more meaningful and interesting when it has a link to the environment, experience of the learner and relevance to learner's expectations.

2.5 Application of learner-centred approaches

Din and Whitley (2007) in reviewing literature from various scholars found that implementation of learner-centred approaches varies depending on subject content and level of intellectual development for learners and size of the class. Din and Whitley's research (as cited from various scholars) at primary level teachers mostly use small group work (Passman, 2000), study analysis, observational learning and writing tasks Ogawa, (2001) and teamwork and comparison tasking (Stout, 2005). At a high school level, Din and Whitley (2007) found that approaches change and become more thought-provoking and demanding. These include critical thinking, problem-solving, stimulating learning (Chiphiko and Shawa, 2014), and peer-interaction (Johnson and Johnson, 2009)

At college level, teachers use student-led discussions (Spurlock, 2003), problem-solving, collaboration, multiple intelligence and real world application. Other strategies include, problem posing and student free choice of topics (Njoroge, 2000), student explored inquiries, self-selected inquiry topics and free choice of what to study (Luke, 2004). The above-presented literature show that application of leaner-learner-centred approach takes into account developmental needs of the learner. However, one of the major arguments about LCE is its labour intensity and time consumption that often lead to failures in completing curriculum instructions. Further to this, use of peer learning develops lower complexity rather than higher order-content.

2.6 Learner-centred approaches and class size context

Application of learner-centred approaches presented above are determined by the number of learners interacting with the teacher at a particular time. As such class size affects the choice of teaching and assessment methods and they are a motivation to teachers because they are in constant contact with all learners (Kadzamira, 2006). Mtika and Gates (2010) argue that smaller class size facilitates individualized teacher support to learners and makes teachers effectively use learner-centred pedagogies. In agreement to this, a study on class size and student achievement in California found that smaller classes have an influence on teacher quality in facilitating the use of learner-centred pedagogies and increase teacher-pupil interaction (Jepsen and Rivkin, 2009). Class size has an impact on the use of class time for both instructional and non-instructional support. Cohen, Raudenbush and Ball (2003) supports that teacher quality is not determined by teacher's qualification but the ability to make pedagogically fruitful and use of materials, students' work and subject matter. In addressing the problem of available instructional time, double shifts policies are arranged which unfortunately further reduces the length of the school week and significantly diminishes overall instructional time (Benavot and Gad, 2004).

Hanushek, Mayer and Peterson (1999) through the Tennessee STAR experiment study on effects of class size on student performance argues that implementation of learner-centred approach depends on teacher professional development rather than the size of the class. He argues that a professional teacher always structure lessons that fit the composition of the class. The Tennessee Value-Added Assessment System (TVAAS) study also argues that that teacher is a dominant factor in inducing active learning regardless of class size (Sanders, Wright and Horn, 1997). However, Rockoff (2004) in studying teacher's impact on student achievement argued that teacher quality is affected by other factors beyond the teacher like class characteristics including class size.

Therefore, large class limits the abilities of teachers to offer effective support to learners despite their competence and quality. Classroom interaction through sharing of life experience and reflective learning are given less emphasis. For example, learners fail to receive individual attention making education demotivating and uninteresting hence leading to dropout (Rockoff, 2004). It also affects the social and emotional competence of a teacher to offer individualized academic supports and on-task behaviours to learners (Jennings and

Greenberg, 2009). Teachers mostly do not offer individual support to pupils due to large numbers of children per class as they need more time for lesson preparations (Mizrachi et al., 2010).

2.7 Learner-centred education content

This section assesses the available literature on the content of LCE through its principles trusted to facilitate learner's construction of knowledge in their own understanding based on experience and the social interaction with the environment. The principles are active learning, teacher as facilitator, cooperative learning, reflective learning and construction of knowledge.

2.7.1 Active learning

Achieving active learning requires provision of more talk time to learners to express their conceptualization of the concepts. Learners are exposed to undertaking more activity-based learning to master various skills. Active learning is more than having more activities in class but the level and intensity of the activities qualify the learning environment as leaner-centred (Morrison, 2009). It requires exposure to problem-solving tasks (Li and Lam, 2013). Active learning stimulates the desire to know more through posing questions for justification and clarifications as the learner attempts to unpack abstract content (Settles, 2012). Active learning creates an interactive classroom (Silverthorn, 2006). For example, the teacher and the learner are both responsible for inducing active learning in the classroom making the process negotiable (Brekelmans, Sleegers and Fraser, 2000). Marinko et al., (2016) in the study of empowering teachers for a student-centred approach identified several active learning approaches that include; problem-based learning, inquiry-based learning, project-led work, resource-based learning, case method, role plays, classroom workshops, group presentations, web-conferences, small group work, peer assessment, and self-assessment. Therefore, active learning is a give and gain process but should be acknowledged that it is not an easy approach to adopt and practice in a classroom with many learners. In a large class context, teachers need special skills to implement active learning. The constructive learning perspective understands that people acquire knowledge through interaction with the environment in socially and culturally acceptable ways hence the promotion of active learning to achieve LCE.

2.7.2 Teacher as facilitator

Constructivism theory of learning underscores that meaningful learning takes place when knowledge is constructed rather than directly received and the teacher exists not as an

instructor but a facilitator in the problem-solving exercise (Zhuoyi, Na and Hongjie, 2012). The teacher is therefore regarded as a learning facilitator, guider, and expert assistant with the assimilation of new and old knowledge. The teacher is also a setting provider, who offers support that will encourage students feel safe to question and reflect on their own learning processes (Bada and Olusegun, 2015). In order to facilitate learning, the teacher recognizes individual student needs and helps them construct knowledge from their perspectives (Taber, 2011).

The teacher remains in control of the learning process but assumes a different role from the traditional pedagogy that views a teacher as the master classroom designer. O'Sullivan (2004), in a Namibian study, found that the teacher as facilitator of learning and not overseer is responsible for structuring lessons to facilitate the learner's role. For example, choice of teaching methods remains the role of a teacher. The teacher monitors understanding of concepts through various assessment methods. It is, therefore, acknowledged that the way a teacher presents learning instruction determines the level of learner's participation. To this effect, traditional methods should not be holistically discarded because lecture method can be structured to provoke thinking rather than recalling from rote. This can be done through the use of question and answer at a level that induces learner activity and thought provocation. The teacher stimulates learning minds, prompts them to think and helps students use their experiences in their own learning (Seng, 2014).

In the study on the conceptualization of LCE by pre-service teachers in Malawi, Mdolo (2017) found that teachers' understanding of the facilitator role is misconceived as mere supervision or invigilation of class activities. Responses from teacher participants showed that a teacher as facilitator is not expected to explain tasks to learners after first instruction is provided. The teacher can only explain when learners comprehend tasks wrongly. This understanding contrast with Bada and Olusegun, (2015) that a teacher is an expert guider. Therefore, the misconception regarding teacher's role leads to taking a passive role in motoring student's completion and performance of assigned academic tasks. As such, inactivity of the teacher fails to associate with the learners to understand their individual needs that require individualized support. The teacher as a facilitator requires facilitation skills that include the ability to address morale, personal issues, resolve group conflicts, evaluate performance, engage in problem-solving process and keep members involved and

active. None of these is achieved with a teacher taking a passive supervisory role (Jingjie, 2002).

When the teacher's role changes to facilitation, learning changes from '*What to How'* (Morrison, 2009; 120). In a Uruguayan study, Morrison (2009) found that making learners more autonomous and positioning them as knowers and experts require the teacher as a facilitator on the learning process. The teacher-facilitator role helps learners to work as a group unit not just aimed at completing tasks. When the teacher does not effectively exist as a facilitator, learners can spend a long time working together without knowing each other a factor that helps in closeness and understanding individual differences and needs. Mizrachi et al. (2010; 13) in a study of active-learning pedagogies in Malawi found that 'parents do not regard the role of a teacher as a facilitator among the qualities of a good teacher'. However, looking through responses (able to make students pass exams, encourages students to work hard, administer corporal punishment, tolerant, resourceful, knowledgeable, and hardworking) on qualities of a good teacher presented, the facilitator role exists though it is not explicitly mentioned. Therefore, the teacher enhances cooperative learning through all the instructional processes that engage the learner in active learning.

2.7.3 Cooperative learning

Li and Lam (2013) describe cooperative learning as student-centred that occurs in a group with support from each other. Students interact with each other in the same group to acquire and practice the elements of a subject matter in order to solve a problem, complete a task or achieve a goal. Therefore, the teacher-facilitator role in cooperative learning starts from lesson preparation by the inclusion of group tasks. Li and Lam (2013) present the principles or basic elements to be ensured in lesson development as follows:

- positive interdependence
- individual accountability
- face-to-face promotive interaction
- group processing

Learning designed in this way makes it impossible for learners to learn alone. As such, the teacher sets tasks that can only be performed in a group. Cooperative learning in a diverse class facilitates and encourages peer support and learners develop interpersonal communication skills. Teaching methods that enhance cooperative learning include;

structured team learning and informal group methods. Personal student interaction helps students learn to value diversity and utilize it for creative problem-solving (Eisen, 2000).

Cooperative learning focuses on peer interraction and group learning whereby learners do not work in isolation. Group work enhances reliance on the other and reduces the competitive working spirit and emphasizes on unity achievement. Johnson and Johnson (2009; 366)have decribed cooperative learning as 'positive interdependent learning'. The teacher facilitates cooperative learning by guiding the process through selection of task that induces peer learning (O'Donnell, 2006). Cooperative learning is more than putting learners in groups but goes beyond to ensure that there is meaningful interaction. The teacher is expected to monitor discussion and be able to deal with problems of team members (Oakley, Hanna, Kuzmyn, and Felder, 2007). However, use of small group learning units is hampered by large class size that makes teachers rely upon much of whole class discussion and reduces the opportunity for many learners to interact. However, for effective achievement of cooperative learning, the teacher requires vigour and skills to monitor progress where diverse opinions converge.

2.7.4 Reflective learning and daily life connections

Reflective learning involves interpreting the knowledge in one's context by aligning it to the relevant experiences and importance after a thorough thought over the process. It is a process of making sense to the tasks and information presented. Disintegrated information is resembled to form meanings (Jordi, 2011). Reflective learning helps to take the learner to deeper conceptual understanding that supports seeing value in the content under exposure (Hedberg, 2009). Reflective learning focuses on enhancing ability by practice rather than listening as it engages the learner in explorative experience in order to capture clear and concise meanings from the content presented. Therefore, reflective learning is active learning and making intelligent decisions rather than a passive acquisition of skills (Van Woerkom, 2004).

2.7.5 Knowledge construction

Learners construct knowledge from presented situations through application and reference to their daily life experiences. It is, therefore, important for students to have enough time to construct the information cognitively and connect the new knowledge to real life. The students should have enough time for communication, learning, synthesis, observation and application to social life, work, family and society (Marinko et al., 2016). Van Aalst (2009;

261) defines knowledge construction as 'the processes by which students solve problems and construct understanding of concepts, phenomena, and situations, considered within cognitive psychology'. This process involves knowledge synthesis, assimilation and restating (Edwards and Mercer, 2013). Constructivism envisages that meanings are derived from the fusion of prior knowledge to the current situation exposed. This calls for deep conceptualization of complexities particular to the subject matter. Constructive learning starts from simple to abstract and complex concepts. Understanding the learner as possessing prior knowledge helps to re-position the learner at the core of the learning process and that everything is developed around the learner because is the central beneficiary of the learning process.

2.8 Challenges in translating LCE theory into practice

This section looks at the connection between theory and practice in a large class context to assess the challenges and opportune areas to build from in ensuring effective implementation of LCE in a large class setting.

2.8.1 Fear of losing teacher authority

Implementation of LCE has faced resistance in some context because teachers feel that adopting a facilitator role is a power shift that dilutes their authority. The traditional approaches to teaching have strength in endorsing teacher's authority but limits student-teacher interaction. In the study of LCE in Bulgaria, Boyadzhieva (2016) found the implementation of LCE challenging in a cultural context that requires children to respect elders' views and keep the social distance. As such, the student-teacher interaction advocated in LCE was very limited and seen as culturally inappropriate. Therefore, achieving learner autonomy in such context implied a gap between policy and practical implementation. Learner autonomy entrusts the learner with the responsibility to control the process by planning and determining execution of the process. Autonomy learning, therefore, models learning in line with identified needs, interests and capacities to achieve the intended outcome. However, such perception of LCE should be understood within the limits of curriculum otherwise education becomes uncontrollable and hard to assess. Lattimer (2015) studying LCE in Kenya agrees that culture challenges implementation of LCE by limiting classroom interaction between male teachers and female students.

De la Sablonnière, Taylor and Sadykova (2009) studying in Kyrgyzstan found that majority of teachers were reluctant to change the expert teacher role to a facilitator role in fear of losing class authority. Consequently, some students who have been exposed much to the teacher talk feel reluctant to engage in class activities as they regard the teacher as lazy and unprepared. Mtika and Gates (2010) also found that students had reservations about the discovery method and regarded LCE as helping the teacher with answers (Vavrus, 2009). This implies a double-edged problem from the teachers and learners and requires interventions from both perspectives. Therefore, teachers need extra effort and deep understanding of LCE to break such barriers and achieve learner's autonomy a factor that goes against the pace and scheduled tasks in the curriculum. The teacher as facilitator maintains teacher authority because the teacher provides instruction, control and guidance, individualized support and feedback on student progress.

2.8.2 Resource constraint

Lattimer (2015) argues that a resource-constrained setting greatly challenges the effective implementation of LCE as schools are poorly funded and fail to procure enough teaching and learning materials. Schweisfurth (2011) describe this as a material barrier that theoretically seems to be ideal for LCE but realistically challenging. Most notably, O'Sullivan (2004) argues that the resources inadequacy common in many developing countries makes LCE, not an appropriate approach to learning in developing country contexts. O'Sullivan (2004), therefore, prefers teacher-centred formalistic approaches but with great emphasis on developing teacher professional capacity. Formalistic teaching involves organised processing of fixed syllabuses, rigid adherence to syllabi, and use of textbook teaching, tight discipline and inspection.

2.8.3 Inadequate teacher support and monitoring mechanisms

Schweisfurth (2011) in the study on LCE in thirty-nine (39) countries, found a gap between policy and practice. The major challenge lies in the application of the LCE theoretical framework in different settings. Challenges in policy perspective focus on unclear LCE expected outcomes at the levels of the teacher and school administration (Schweisfurth 2013b). It should, therefore, be understood that policy language is more technical and requires simplified implementation guidelines to ensure practical application to the local setting. For example, understanding of the teacher's role in LCE translates into the way the teacher behaves in the classroom and what should be monitored by the inspectorate.

Further to this, a prescriptive curriculum limits teachers' flexibility by regulating the contextual material, political and economic factors at the classroom and education system levels (Sikoyo, 2010). As a result, failure by in-service teachers to effectively implement the LCE is concluded as resistance to change when teacher's adaptation to the new paradigm and strategies require more support and monitoring mechanisms. Seng (2014) in the Malaysian study found that shifting from the traditional 'chalk and talk' teaching practised for decades to learner-centred approach is more difficult for a long-serving teacher than a newly graduated teacher because they are not well prepared to handle the transition. Schweisfurth (2011) also concludes that influence from the donor power balance to some extent contributes to curriculum development that leans towards the donor interests hence creating a gap between policy theory and practical implementation.

2.8.4 Quality of teacher training and experience

Implementation of learner-centred education depends on the skills and competence of the teacher to create an enabling environment that facilitates constructive learning. A constructivist teacher takes control of what happens in the classroom by setting up tasks, guides and monitors engagement with content and encourages interpretations and new thinking (Schreurs, and Al-Huneidi, 2011). Aksit, Niemi, and Nevgi (2016:100) in the study on challenges educators face to achieve active learning in class using the case study of Turkey found that teachers fear loss of control and lack of confidence. For example when active learning causes too much noise, a teacher feels like failing on classroom behaviour management. Therefore, effective teacher training supports the teacher to make self-reflection and analysis of their practice in order to identify areas for improvement in a continuous process. Such reflective exercise helps teachers adapt the teaching strategies and align them with the classroom context

2.8.5 Higher work intensity

Class size contributes to teacher motivation in engaging learners in active and participatory learning. Darling-Hammond (2003) in the study on teacher retention in Los Angeles and California found that a larger class contributed to teachers leaving the profession due to burn out from demands of a large class. The study found that teachers felt depressed with lack of administrative support, shortage of teaching and learning resources and higher workload in learner assessment. These factors contribute to creating a tiring working environment that mostly drains much energy from the teacher.

2.8.6 Limited classroom interaction and choice of teaching methods

Mtika and Gates (2010) in studying the way student teachers practised LCE in Malawi found class size to be a limiting factor in the choice of teaching methods. Large numbers of learners put pressure on teachers in choosing the appropriate methods that would be practical in the prevailing context. For example, the study found difficulties among student teachers in using group work in a class of about 80 learners because they could not manage to prepare enough teaching resources for all learners and monitor all the work done in groups. Class size affects time a teacher spends with learners and determines the support teachers give. It affects mode and frequency of assessment, teacher feedback, task intensity and choice of teaching methods applicable in such context. This is contrary to what Sunzuma, Ndemo, Zinyeka and Zezekwa (2012) concluded in the study on class size in Zimbabwe that class size is a small issue to affect effective implementation of learner-centred approach.

2.8.7 Classroom management abilities and competence

Successful implementation of LCE in a large class setting requires strong and comprehensive teacher's ability to ensure order in the class. Shechtman and Leichtentritt (2004) argue that successful classroom management can be easily achieved when learners are involved in class activities. Activity learning keeps learners busy and draws their attention away from playing and noise making. Learning that apply to daily life arouses interest to learn more hence drawing the attention of the learner. A learner that is engaged is able to build confidence, cooperative skills, dependence on each other and respecting each other's view. Failure to manage classroom behaviour increases stress on the teacher and learners as well. Parsonson (2012; 16) offers suggestions that classroom behaviour control can be managed by focusing on the individual. In this duty, the teacher uses the skills of setting achievable tasks, employing various teaching and learning materials, support learner challenges in accomplishing class tasks and designing seating arrangements that increase teacher-learner contact. The study focuses on investigating the practicality of these skills in a large class context. Teaching methods that are inquiry and discovery-based are believed to achieve positive effects on students' behaviours (Shechtman and Leichtentritt, 2004). However, as earlier argued, active and participatory learning in a large class context is very challenging as it limits the choice of teaching strategies that are inquiry-based and exploratory. As a result, classroom behaviour control in a large class remains to be a big challenge to many teachers and affect implementation of the learner-centred approach.

2.8.8 Teacher capacity and skills

Studies on the implementation of LCE in Malawi found that the approach is burdensome to the long-serving teacher. Further to this, new teachers use memorization without a proper understanding of the expected outcomes of such methods (Mizrachi et al., 2010). These studies also found that policy formulation and practice do not speak to each other and there is lack of comprehensive evaluation to check on what works and what does not in order to review the policy to match social context. Seng (2014) in investigating teacher's view on student-centred learning approaches in Malaysia, found that shifting from 'chalk and talk' approach to LCE has not been easy because of extra skills are needed in implementing the approach

2.9 Summary

The country under study offers a different context of teaching and learning environment about class size. Implementation of LCE is affected by conceptualization and content of LCE. The chapter has discussed the understanding of learner-centred approach as an approach that engages the learner into active and participatory learning. In such situation, the teacher exists as an expert guide and facilitator in creating a favourable learning environment. The presented literature has also shown that active learning is more than keeping learners busy in class but ensuring that learners understand and benefit more from the teaching and learning process. The reluctance of some learners to engage in active learning and presumed as laziness and lack preparation from the teacher is an indicator of challenges change brings on every new concept introduced. Therefore, the body of literature presented in this chapter emphasizes that LCE is trusted as a way to improve quality of education in developing countries despite the resource constraints that such countries face. Further to this, class size has negative effects on effective implementation of LCE with bigger classes presenting more challenges to the teacher. This study, therefore, is not linking LC approaches to performance but assessment of how teachers implement the approach in a large class setting.

CHAPTER THREE: THEORETICAL OVERVIEW

3.1 Introduction

The chapter presents an overview of constructivism theoretical framework on which the study is interrogated. It highlights the development of the theory, its elements and aspects, linkage to LCE and the application to the study. The theory is relevant to interrogating the subject matter because LCE developed from the philosophy of constructivist learning that emphasizes on active and participatory learning. Constructivism learning theory and LCE both recognize the responsibility of a teacher in creating an enabling environment that supports active and participatory learning. In this regard, both the theory and the LCE recognize the teacher as a facilitator of learning. The study therefore, applies the theory from the perspective of teacher's role in inducing active and participatory learning as it investigates the feasibility of its implementation in a large class setting

3.2 Background to the constructivism theory of learning

Constructivism theory of learning developed from cognitive development theory in the 1930s. The theory propagated that every person has the potential to learn and has an inquisitive mind to learn more when someone facilitates the learning process. It further argued that provision of basis for thinking supports further development of the ideas. Piaget's line of reasoning faced criticisms from social psychologists who argued that learning also happens socially even without someone creating a learning environment. Social psychologists further argued that the practices of people within the society create room for learning and deducing meanings without someone guiding the learning process. Such line of argument led to the birth of social constructivism championed by Vigotsky (Taber, 2011; 48). Von Glasersfeld consolidated the two branches of knowledge construction as advanced by constructivists and social constructivist by arguing that in other occasions, people constructs meanings on their own while at other times they need guidance or brief information (Fosnot 2005). In this regard, modern progressive studies in education regard constructivism and social constructivism as complimentary and inseparable and manifested in learner-centered approaches (Taber, 2011).

3.3 Conceptualization of constructivism theory of learning

Constructivism believes in a learner as a potential person with the ability to learn something when exposed to a favourable environment. Knowledge construction comes as a result of building new knowledge on the previous experience and existing information. Constructivism regards teaching and learning as mental constructions whereby students learn by fitting new knowledge together with what they already know (Bada and Olusegun, 2015). Knowledge

construction is regarded as social and continuous process that is invented as a group and refined with further interaction (Kim, 2001). The constructivist learning theory emphasizes invention of knowledge and that effective learning requires meaningful, open-ended problem-solving environment to the learner. This, in turn, calls for inquisitive learning that leads to a further discovery of new knowledge from the same context. Learning becomes more than memorizing and remembering the content but making sense out of all the knowledge provided. Therefore, knowledge is a product of knowing and processing instruction from thought provoking situation that engages a person in deducing meanings and interpretations (Jones and Brader-Araje, 2002). A person gets intrinsic and extrinsic motivation to desire and learn more. Matthew (2003) argues that extrinsic motivation by external reinforcements, like rewards works better on people whose inner motivation is low.

3.4 Elements of constructivism theory of learning

Constructivism theory of learning expects the learner to be actively engaged in the learning process. All learners are treated as unique individuals and form knowledge in different ways from the same situation. These learners form knowledge at different paces from each other hence the need for individualized support responding to the need. Constructive learning is enhanced when learners join together to undertake a task. In such groups, learners build interpretations from each other's views. A learner needs motivation to develop the interest to learn. Considering that some learners are self-motivated to inquire for more knowledge, others need an external factor to stimulate the interest. In this regard, the instructor of learning becomes the facilitator of the learning process. To those who are self-interested, the instructor is important to sustain that interest and create an environment that would allow exposure to thought-provoking content (Taber, 2011). Realization of the above highlighted principles of constructivist instruction rests on the role of the teacher as a facilitator of learning to which LCE advocates.

3.5 The LCE and constructivism theory

LCE challenges teachers to present learners with opportunities to think by proposing doubts in the learner that encourages them to create new constructions. It further ensures that teachers are able to facilitate activity learning and the teacher is understood as the master designer in creating a favourable environment for the construction of new concepts. LCE recognizes learners as potential individuals with the capacity of behaving actively and responsibly in their learning (Morrison, 2009; Chiphiko and Shawa, 2014). It also enables

students to build multiple historical perspectives Ogawa (2001), improves understanding of historical ideas and concepts (Stout, 2005) and enhancing responsible learning (Passman, 2000). Therefore, LCE is based on the principles of active and participatory learning, cooperative learning (Li and Lam, 2013), reflective learning that links up content to daily life experiences (Marinko et al., 2016), and teacher as the facilitator of learning (Schweisfurth, 2013a).

The constructivist theory further calls for teachers to first conceptualize the content to be taught before being presented to learners. This, in turn, calls for thorough preparation and understanding of the content by the teacher. The teacher constructs the knowledge in own perspective and expects learners to re-construct it differently. Consistent interaction between the learner and the teacher supports knowledge construction in own perspective and the teacher supports the learner to refine and remodel the preconceived ideas to fit within the body of knowledge (Kim, Kwon, and Cho, 2011). This task requires the teacher to be an expert guide and facilitator of learning.

Instruction in constructivism is complex, thought-provoking and close to real life. Learning disintegrates compound content into simpler portions that are easier to understand. Information processing is easier when understood in one's context and level of understanding. As such, team learning helps to get feedback on one's view from peers that in turn help to shape and re-mould to perfection. Learning in this perspective is understood as an erroneous process whereby the corrected errors sharpen the final interpretation. Learning that engages the learner into rigorous exercise of knowledge construction avoids mere reproduction of knowledge. This is where evaluation in the learning process becomes important to assess the level of skills and knowledge comprehension by the learners (Terhrat, 2003).

Constructivist ideas about learning require a progressive and child-centred pedagogy and demand active learning that engages learners with practical activities (Jenkins 2000; 599). LCE comes as a progressive approach to implement constructivist learning in a classroom. It developed as a way of supporting learners so that they benefit from the learning process by increased interaction with the content at their exposal. LCE is based on the constructivism conceptual framework and has been popular among many educators in the recent debates on approaches to learning. The approach is being widely applied in teaching at various levels of

education from the kindergarten to tertiary. The growth in experimentation of its applicability cultivates interest to further research in various contexts (Taber, 2011).

Therefore, learner-centred approach is consistent with a constructivist teaching and is expected to meet student-learning needs that go together with developmental stages. Education today has seen a very big shift from the traditional pedagogy that saw a teacher in front of learners pouring out knowledge with learners silently listening. The teacher's authority in such environments was much of controlling the class interaction with learners obeying what teachers instructed. In such pedagogical environment, it was hard to distinguish teacher's instruction from teacher's order as learners had limited space to slot in their views. Class visitation would witness different seating plans with tables arranged to face each other or in circles. Most often, learning today involves a lot of supporting materials facilitating learners 'engagement with environment.

3.6 A constructivist classroom

The LCE attempts to create a constructivist classroom that contrasts with the notion that classroom learning should be orderly, systematic and quiet. Implementation of constructivism in classroom expects the learner to construct concepts on the basis of their own thoughts. The teacher's feedback recognizes that learner's response is an interpretation of a situation and a result of a thought process. Applefield, Huber and Moallen, (2001) describes a constructivist classroom as an environment where learning occurs in cooperatives dominated by teacher-learner and learner-learner interactions. Learning is challenging and reflects upon interaction with objects and ideas implying that a constructivist classroom is very resourceful. Students are empowered to ask own questions and seek their own answers to understand complexities. The class social and physical structure is designed to enable learners work together and struggle to make sense of their environment. Teachers encourage learners to think aloud which means a constructivist classroom is noisy. Learning is guided and the teachers set an environment where knowledge construction is built on inquiry and problem solving and learners are challenged to make numerous interpretations from the same situations. Learners who get first tasks are encouraged to move to the next level in so doing learning becomes progressive an unending process (Applefield et al., 2001)

In clarifying misconceptions about constructivist learning, Applefield et al. (2001) argue that constructive learning does not mean unfocused and unstructured learning. The teacher

designs the learning environment to facilitate active participation. Further to this, the teacher is expected to thoroughly prepare all lessons together with materials to support learner-content engagement. They further argue that not all discussions and social interactions facilitate learning. In this regard, constructivist learning expects the teacher to effectively monitor classroom activities and group interactions and offer relevant guidance and feedback to learners' views and discovery points. Finally, they argue that many teachers misunderstand constructivist learning as a replacement for lecturing and instruction delivery to learners. The teacher remains in control of the learning process and in setting the pace for constructivist learning the teacher has to provide clear and precise instructions to the intended task.

Von Glasersfeld (2001; 170) presents an example of how teachers induce active learning that supports learners' construction of knowledge as follows:

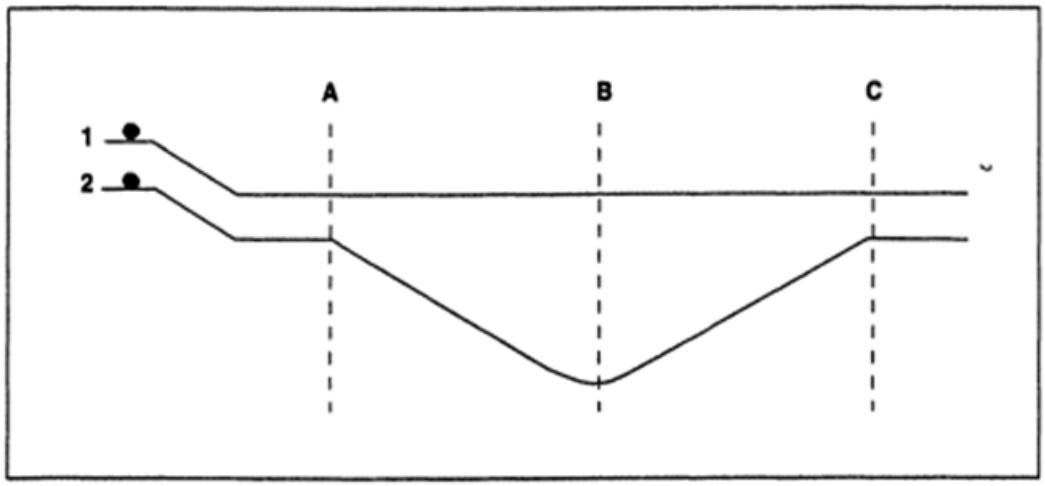


Figure 1: An illustration of discovery learning process (The two tracks of 1 and 2 on which steel balls can roll almost without loss of energy through friction. The two tracks are not identical, but the starting point and the finish are at the same height in both cases. The question is, if the two balls leave at the same time, which will reach the finishing line first?
Source: Von Glasersfeld (2001)

Von Glasersfeld's (2001) illustration supports the understanding that learner-centred education requires creation of an environment that promotes discovery and thought-provoking processes. They, in turn, apply various theories in an attempt to get the right answer while the teacher remains neutral. In the end, the teacher summarizes the points and that helps sieve out wrong ideas and remain with the correct answer. In so doing, the teacher exists as a learning facilitator, guider, expert assistant, and setting provider, who offers

support and encourages students to feel safe to question and reflect on their own learning processes.

Learner-centred education approach assesses the relevance of education and the curriculum to a real-life situation by encouraging discovery learning. In this view, a teacher as a facilitator helps learners get the best optimum good from education. The approach acknowledges active learning as opposed to passive reception of information. However, there is always a challenge between theory and practice. For example, constructivism requires building learning on learner's prior knowledge and the study investigates how the implementation of LCE engages learners in knowledge construction in accordance to the constructivist instructions. It is, therefore, against this background that the study uses constructivist-learning theory to investigate how teachers manage to apply LCE in a class setting with more than sixty learners.

3.7 Summary

This chapter has highlighted the constructivism theoretical framework on which the study is drawn. The theory as developed from Piaget's cognitive development theory focuses knowledge construction and the teacher posit as facilitator of the learning process. Social constructivism in this regard is presented as a sub-set of constructivism by emphasizing on the role social environment plays in supporting cognitive conceptual development. The chapter has further presented a conceptual understanding of the theory and its application to investigating the study. The next chapter moves the study further to research design that guided investigation of the topic.

CHAPTER FOUR: DATA AND METHODOLOGY

4.1 Introduction

The chapter concentrates on the methodology engaged to interrogate the subject matter under investigation. Main areas of focus include the research design, research setting, sample size and sampling, data collection, data analysis, ethical considerations and study limitations.

4.2 Research design

This study adopts a qualitative research approach because investigating the implementation of LCE in a large class requires conducting a deep inquiry on the practices and experiences of all people involved in the implementation of LCE. Creswell and Miller (2000) describe qualitative research as an approach that is more open-ended and conducted through intense contact with the situation in order to get a holistic overview of the theme under study. A qualitative research provides in-depth subject understanding of circumstances and experiences (Ritchie, Lewis, Nicholls and Ormston, 2013). The qualitative approach was chosen because the topic under study involves understanding the nature and experience of teaching a large class, which cannot be quantifiably assessed. Qualitative research questions the experience of participants and perceptions from their own perspectives (Hammarberg, Kirkman and De Lacey, 2016). Understanding the position of implementation of LCE required contact with relevant people in the implementation. These people included teachers, education advisors and inspector who work together in support of LCE implementation. The mentioned participants had lived experiences and feelings to share because of their practice and supervision. As such, the qualitative approach to this study helped in understanding the feasibility of implementing LCE in a large class from the perspective of people entrusted with the responsibility of implementation and overseeing the implementation process.

The research adopts a constructivism paradigm which explains and describes teachers' experiences in implementing learner-centred education in a large class setting. The constructivism paradigm brings about the need to a combination of observation and interviewing approaches to foster conversation and reflection on teacher's experience in implementing learner-centred education in a large class setting. The constructivism supports the goal of investigating the actual situation of implementing LCE in a large class setting, understand the challenges and suggest ways of addressing them.

This research used the case study design as the inquiry strategy in engaging the research. A case study research interrogates the topic analytically, with a deep description of the situation in a particular setting (Creswell, Hanson, Plano and Morales, 2007). The study in this case chose five local education zones in the Lilongwe Urban Education district as a particular context to interrogate the subject matter. Considering that all the five education zones are under the same education administrative authority, they share similar aspects in terms of class structure, class size, number of teaching staff, and follow the same education management plan. This implied that the study had an opportunity to investigate the topic in a similar environment. Such a contextualized setting helped to interrogate the topic in depth as the sample was limited to the particular setup thereby increasing the representation and reliability of data captured. The research, therefore, adopted a case study method to inquire and interrogate the linkage between (LCE) theory and praxis in a contextualized setting of a large class in Lilongwe Urban District Education Zone in Malawi.

4.3 Research setting

The study setting was Lilongwe the capital city of Malawi lying on the coordinates on 13.9626º South and 33.7741º East. The study target area is Lilongwe Urban District Education Management zone, which covers the whole city area. Under the education administration the area comprises 56 primary schools existing in five local education zones of Chimutu (14 schools), Mkukula (6 schools), Chiwoko (14 schools), Kafulu (11 schools) and Mvunguti (14 schools). A Primary Education Advisor (PEA) supervises each local education zone. Schools in each zone are spread across low, medium and highly populations of urban, semi-urban and peri-urban settlements. The area has approximately 157143 pupils in 1625 learning structures and 2036 teachers.[1] From these figures, a simple calculation indicates a teacher pupil ratio of 1:77. General teacher-pupil ratio compares the number of teachers to learners. Teachers available in the school including those engaged in various administrative works and are not involved in lesson delivery are counted in the teacher pupil ratio. The study area had a teacher pupil ratio of 1:77 but the focus was not limited to general teacher-pupil ratio but mainly the class size which looks at the actual number of teachers interacting with learners at a particular time.

[1] Information obtained from the District Education Management and Information Systems office (DEMIS), Lilongwe district education office on 19 January 2018

4.4 Sample and Sampling method

The study used a purposive sampling method whereby units are deliberately selected for possessing special characteristics that helps to engage in detailed exploration and understanding of the key issue under study (Ritchie et al., 2013). Purposive sampling entails that participants to the study are carefully identified as falling within the bracket of those expected to possess the required information. In this study teachers are the participants directly engaged in implementing LCE in the classroom context. The education supervisors play a monitoring and capacity building role for teachers to support them in implementing LCE. The inspector of school monitors teachers' implementation of LCE in various subjects and offer guidance and advice on aspects. Therefore, the study had planned a sample of sixteen comprising ten teachers, five Primary Education Advisors (PEAs) and one inspector of schools. The ten teachers were to be selected from five schools in the district with one school participating in the study. This meant that the study anticipated getting two teachers from each school with preference to one teacher who had undergone a pre-service and the other to have gone through in-service training in LCE. However, the study managed to interview nine teachers, five education advisors and one inspector of schools because one participant who already agreed to the interview was engaged in other school assigned activities. The selection criteria employed in this study facilitated obtaining rich information regarding the transition from pedagogy to learner-centred methods. The recruitment process started with visitation to the District Education Management (DEM) officer as expression of readiness to start the field research. The DEM helped in identifying schools with the highest enrollment in each zone as per selection criteria and the following schools were in turn identified as follows:

Table 1: Statistical overview of the study area

	School	**Zone**	**Number of learners**	**Number of teachers**
1.	Chatata primary	Mkukula	2526	32
2.	Chipala Primary	Mvunguti	7726	73
3.	Chinsapo	Chimutu	5719	59
4.	M'buka	Kafulu	6157	69
5.	Kaliyeka	Chiwoko	6188	86

After identification of the schools, the researcher was permitted to meet the zone supervisors and the schools to arrange for interview sessions with support of the gatekeepers letter already provided (**See Appendix IV)**. As such, identification of teachers to be interviewed was based on teachers handling largest classes in the schools. Therefore, during the first visit, the researcher had opportunity to meet willing participants and discussed their willingness in participating in the study. Considering that classes in the primary schools are either handled by one or two teachers only, the selection of largest classes meant selecting the teacher as a participant. In situations where there were two teachers handling a class and both were willing to be interviewed, the researcher looked at the mode of LCE training and subject allocation of already interviewed teachers in order to decide the teacher to be interviewed so that there is balanced representation on mode of LCE training and subjects to be observed.

Upon acceptance, dates and time for interviews and lesson observations were scheduled. There was a slight difference from the initial plan, which expected to hold staff meetings to introduce the study and call for volunteering participants. The strategy did not compromise on voluntary participation because at every school more classes were identified for possible interviews. As such, teachers were free to refuse being interviewed and selection would have gone to other possible classes. Lesson observations were conducted in order to have the living experience of the teacher's classroom practice in implementing LCE. It was also conducted to provide a linkage, proof and confirmation between what teachers expressed as their experience and practice to what actually happens in the class. The major aim was to ensure credibility and reliability of the data collected so as to make credible conclusions. During observations, the researcher used an observation checklist with principles of LCE to guide in understanding practices of the teacher in class in accordance to the expectations of LCE. After the lesson, interviews were conducted with individual teachers whose lessons were observed to have better understanding of their practice during lesson delivery.

The second and third categories of participants comprised five (5) Primary Education Advisors (PEAs) and one (1) Inspector of schools responsible for primary section located at the District Education Management office in Lilongwe. The PEAs and the Inspector of schools were selected as key informants and only available resource in their positions. However, due to other challenges, 9 teachers participated in the study. The teachers interviewed were from standards 2, 4, 5, 6, and 7. From the 9 teachers, five lessons were observed in standard 2, 5, 6 and 7 representing the infant, junior and senior primary school

levels. The lessons were observed in Mathematics, English, Chichewa and Primary Science. The distribution of participants across all the three levels of primary school indicates a good representation of the sample and that the topic was comprehensively investigated.

The demographical presentation is as follows:

Table 2: Demographic description of the participants-Teacher participant code

No	School code	Participant code	Class teaching	Class size	Number of teachers	Mode of LCE training
1.	SCH1	TR1	Standard 2	121	1	Pre-Service
2.	SCH2	TR2	Standard 2	120	1	Pre-Service
3.	SCH3	TR3	Standard 4	136	1	In-Service
4.	SCH4	TR4	Standard 4	251	1	In-Service
5.	SCH5	TR5	Standard 5	286	2	Pre-Service
6.	SCH6	TR6	Standard 6	240	2	Pre-Service
7.	SCH7	TR7	Standard 7	239	2	In-Service
8.	SCH8	TR8	Standard 7	350	3	In-Service
9.	SCH9	TR9	Standard 7	180	2	Pre-Service

Table 3: Identification codes for zone supervisor participants

Zone 1	**SR1**
Zone 2	**SR2**
Zone 3	**SR3**
Zone4	**SR4**
Zone 5	**SR5**

4.4.1 Sample characteristics

The study found that five of the teacher participants had undergone through LCE training from their teacher training pre-service education program while the other four were introduced to LCE through In-service teacher training sessions (INSERT). The In-service trainings are arranged to build skills of teachers already in service when the Primary Curriculum Assessment Review (PCAR) was introduced in 2001. However, the study found that with passage of time, in-service training includes both groups of teachers. Further to this,

the study engaged Primary Education Advisors (PEAs) from the five local education zones of Mkukula, Mvunguti, Chimutu, Kafulu and Chiwoko in the Lilongwe Urban district.

4.5 Data collection

The data collection was done from November to December 2017 in Lilongwe Urban District Education Management zone. This study used in-depth interviews on the implementation of LCE in a large classroom environment. The in-depth interviews were conducted with unstructured interview guide that allowed free flow of information, perceptions and expectations. In-depth Interviews help to get more responses that are detailed and help the participants to be explicit in their narrations of experiences (Gray, 2013). Legard, Keegan and Ward (2003) describe in-depth interviews as purposeful conversations and human interactions whereby knowledge is constructed. As such, in-depth interviews help to obtain participants' comprehensive understanding of the topic under study. The direct interaction with participants makes it possible for the research to obtain rich data from a small sample size (Boyce and Neale, 2006). All interviews were recorded and conducted in English with an unstructured interview guide. The interviews run for approximately one hour. Open-ended questions allow flexibility in making follow-ups and probing on various critical issues raised by participant to collect relevant data related to the objectives of the study.

Apart from the individual interviews conducted, the study also included observation of five lessons to assess teachers' practical implementation of the principles of LCE. The researcher observed lessons in progress to obtain more facts and evidence on the how teachers make learning participatory, active, thought provocative and reflective in line with the principles of LCE. The researcher did not intervene in the lesson delivery and made no comments to the teachers conduct during lesson delivery. The researcher was able to take down observations guided by the checklist that was designed highlighting the basic components of LCE (**See Appendix II)**.

4.6 Data Analysis

The study used thematic analysis in identifying common patterns and contrasts in the data collected. The thematic analysis builds categories from codes through identification of recurring issues in the data sets and these issues are given codes. It involves identifying common codes that are grouped to produce a thematic framework for interpretations and discussions (Braun and Clarke, 2006). Thematic analysis summarizes the views of

participants in the collected data into themes (Patton, 2002). It also helps to identify, analyze and report patterns in a minimally organized but rich detail.

The information collected was transcribed, and all field notes were typed. The coding process followed after transcription whereby all similar codes were grouped into common sub-themes that culminated into major themes. Coding helps to understand what the respondents meant in all responses. Thematic codes are tags given to sentences or words to index common occurred concepts in the data. Similar codes that seem to give same understanding are then merged to form a comprehensive framework for analysis (Patton (2002; Creswell, 2013). A theme 'identifies an important aspect in the data that would help in making plausible interpretations and conclusions' (Braun and Clarke, 2006; 82). Discussion and interpretation are made from the constructed thematic framework. Mays and Pope (2000) present the thematic analysis in five steps that include familiarization of data, identifying a thematic framework, indexing, charting, and mapping and interpretation.

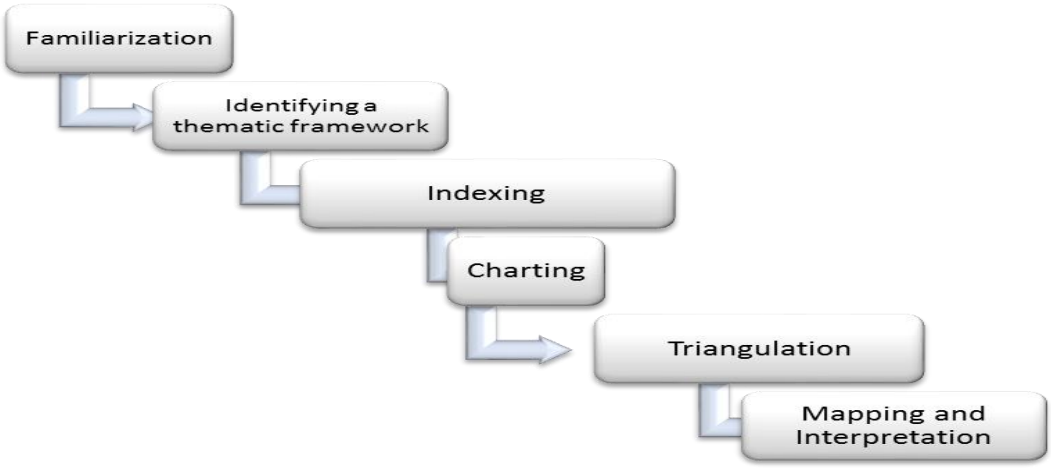
In order to achieve familiarization of data, the researcher did all the interviews alone. However, a research assistant was recruited specially to help with transcribing and taking down field notes during interviews. The research assistant consented to ethical considerations of the study and signed the participant consent form to abide by the confidentiality of all materials and information encountered in the study. The researcher was the only person asking the questions during the interview whilst the research assistant took down field notes and transcribed the interviews. All interviews transcribed by the research assistant were reviewed to check compliance with the recorded sessions Therefore, frequent reference to all data collected in the analysis process increase familiarity with data collected. Understanding of the data helped to link up responses and check compatibility with the research objectives.

Codes are assigned to help identify similarity in the data and the assigned code can either be a single word or a number. Data that is coded and indexed helps to develop a logical flow of the ideas to be advanced and the interpretation become connected. The assignment of key words or codes to data begins the process of assigning meanings. In this case, indexing breaks down, theorizes and reforms the data (Bloor and Wood, 2006).

Charting involves re-arranging and placing data in relevant sections of the framework to create a flow of ideas from main themes through to sub-themes and their extensions. Charting puts order to words, phrases, and clusters to create validity. Charting is finally followed by

data triangulation, which involves comparison of data to determine convergence, differences or some combinations. This study will engage triangulation because data is collected from three different perspectives of the teacher as implementer from their narrated experience, lesson observations to get a practical feel of the implementation and from the supervisory positions of the Primary Education Advisers and the Inspector of schools. The final process involves maping and interpretation whereby concepts are defined and the range and nature of phenomena are mapped. Mapping includes classification of data to determine relationship between themes in order to support interpretation of the findings. The thematic analysis framework is diagrammatically presented below:

Figure 2: An illustration of thematic analysis process adapted from Mays and Pope (2000)



4.7 Validity

Research validity is a way the researcher checks for accuracy of the findings. It entails the degree of trust in the data and the analysis process and the strength of the research findings to convince the reader about its validity, accuracy, and trustworthiness (Creswell, 2013). Guba and Lincoln (1981) explain reliability as the trustworthiness of the study and the way research findings match reality. It further tests the ability to competently generalize the conclusions as true representation of the whole population. Research validity is achieved when it achieves the intended objectives. The researcher develops confidence in the validity of the research from the design and process engaged in achieving the results (Golafshani, 2003). Validity in this study was therefore ensured through the linkage of the research objectives to the tools used to capture data and the selection of participants with direct and practical experiences in

the implementation of the topic under investigations. The research had respondents trusted to give a true reflection of the practice of LCE in a large class setting. In this regard, the findings are trusted because data was obtained direct from people who have lived experiences in implementing LCE in a large class environment hence the study represents the reality on the ground.

4.7.1 Credibility

The reader judges research credibility based on his/her understanding of the study. As such, the study triangulated data from teachers, supervisors, inspector of schools and lesson observations to help in building coherent themes as a matter of ensuring credibility of the data collected. Further to this, in-depth interviews with probing for more information and coherence of responses ensured credibility of data collected.

4.7.2 Transferability

Research findings are transferable or generalizable when they can be applied to another context with similar characteristics. Considering that case study approach applies to a particular context, generalization of results becomes challenging especially when a small sample size is used. Therefore, the in-depth interviews conducted helped to comprehensively investigate the topic under study and ensured that conclusions made from the study are reliable and can be replicated elsewhere. The lesson observations offered an opportunity to experience a real classroom interaction and witness the extent to which LCE works in a large class environment. This gives confidence that replicating the study elsewhere in a similar large class context would bring out similar conclusions.

4.7.3 Dependability

Dependability in research happens when the study findings would come out similar in a consistent manner when replicated in a similar context and done to a similar group. This implies that the study findings in this research are dependable when a similar study with teachers, education advisors and inspector of schools in a different education zone would produce similar results. The different sources of data from teachers, supervisors, inspector of schools and lesson observations helped to ensure that results and interpretations are consistent with data collected.

4.7.4 Conformability

Research conformability happens when the findings are corroborated and confirmed by others. All the collected data will be archived in well retrievable form so that it is available to those who may challenge the findings. The study seriously considered conformity of the research in ensuring corroboration of the responses by other respondents. Finally, lesson observations helped to relate responses to classroom reality. Engaging key informants like the primary education advisors and the inspector of schools helped to get responses from their practical experience and observations in supervision.

4.8. Rigour

Research rigour is 'the extent to which the researcher ensures quality of the study' (Heale and Twycross, 2015; 66). The quality of this study was therefore ensured through reliable use of the interview guide and the observation checklist that supported in getting relevant data for the research. Murphy and Yielder (2010) links rigour to goodness of the research embedded in the research philosophy, methodology, data collection and control of the relationship between the researcher and the participants. Research rigour calls for the carefulness and commitment given to the research and controlling factors that may affect actions of the researcher. Research rigour helps to control researcher bias and improve on reliability of the research findings. The use of in-depth interviews with individual participants in the study helped to ensure reliability of the data collected because it offered an opportunity to cross-check responses through asking for clarifications, confirm conclusions and request for more detailed information in some aspects mentioned. Such process helps to cross-check truthfulness and coherence of responses from participants. Through In-depth individual interviews, the researcher collected detailed, constructive and insightful responses from a small sample size because of the ability to probe for further justifications and clarifications on some responses given. The researcher used his experience in teaching and education administration to collect in-depth and reliable data during lesson observation and individual interviews while maintaining neutrality. Neutrality was ensured by asking open-ended questions that allowed the participant provide information without obstruction or being lead to the desirable answers. This, in turn, helped to avoid capture by experience and knowledge in the field of study. The researcher acknowledged that teaching practice changes as such reliance on people in practice as experts helped to build trust in the participants who provided reliable and current information.

The lesson observations helped to collaborate on the responses from interviews and actual classroom practice to ensure that data collected was valid and reliable. The research maintained neutrality and avoided influencing participants by listening more to what was said without interruptions. There were instances where participants attempted to draw the researcher into empathetic discussions of the challenges teachers face in effective implementation of LCE. This was controlled by avoiding giving out solutions to the problems and challenges teachers face but focusing on listening to the shared experiences. Recorded interviews helped to ensure careful interpretations from the actual data collected during transcription through replays where audibility was not clear.

4.9 Researcher bias

Bloor and Wood (2006; 22) define bias as 'factors that distort results of the study'. A researcher may knowingly or unknowingly use own beliefs and expectations in analysis and interpretation of data and result in making errors. To avoid personal interests affecting research results, the researcher considered the study context as part of the social world lived in that values and experiences may influence perceptions. As such, adherence to the research guide and its objectives helped in addressing researcher bias by focusing on the goals of the study and maintaining neutrality. Further to this, the researcher used the experience in teaching and education administration to investigate more on the topic under study and facilitates in-depth and reliable data collection exercise. This, in turn, helped to avoid capture by experience and knowledge in the field of study.

Researcher bias was further controlled by allowing selection of participants to be done by the recruitment strategy. For example, when two teachers from the same class were willing to participate in the interview and only one was required, the researcher used the discretion mode of LCE training attended and subject allocation so as to have a balanced representation of the participants. Controlling bias helps improve reliability of the research findings mirrors the real situation rather than views of the researcher. Therefore, the study reliability was ensured through determination of the repetitiveness, consistency and similarity of the responses from the gathered data to which Guest, Namey and Mitchell (2012) referred to as the saturation point. Research reaches data saturation when it collects enough information to make credible conclusions and that further inquiry reproduces data similar to what is already collected (Ness, 2015). In the study, data saturation on interviews with zone supervisors was reached by the third interview and with teachers was reached by the eighth interview. As

such, failure to meet the tenth teacher was assumed to have limited effect to the study as enough information was deemed collected.

4.10 Ethical consideration

Cohen, Manion and Morrison (2007) underscore the major challenge in social research as the compromise between professional demands and participants expectations and respect for their rights and values. Ethical problems mainly increase in extent when the subject under study narrows from general to specific and from abstract to concrete where the participant is expected to give personal opinions. In this context, therefore, ethical consideration becomes pivotal to research, helps to reflect on good and bad practices, and approaches to the research. As such, ethical consideration required consent that is informed after the participant understands the nature, purpose and role in the study. Mandal and Parija (2014) describe informed consent as the willingness of the participant to engage in the study where one feels secure and trusts the confidentiality of the research. The researcher must be honest when presenting facts about the research process and offer relevant aspects of the research without hiding important information to the participant. Therefore, all the participants in the research must be free to choose to participate or to refuse taking part (Gilbert, 2008). The study was permitted by Lilongwe Urban District Education Management office and the study ensured confidentiality of all participants by not identifying them by their names in all interviews. Participants willingly signed consent forms before interviews and understood the nature of the study after a brief discussion about it. Further to this, participants understood their freedom to pull out or not respond to some questions without compromising their role in the research.

4.11 Data management

Safety of data collected was ensured throughout the collection and analysis process by limiting its access to the researcher. Saving of electronic copies of the transcribed data and typed field notes increased security of the data as no other person apart from the researcher had access the electronic documents. The collected data remained secure under the custody of the supervisor in accordance with rules and regulations of data management at the University of KwaZulu-Natal will safeguard the data for a period of five years. After five years, the data on hard copies would be disposed by means of a paper shredder at the University of KwaZulu-Natal, and qualitative data would be completely and permanently deleted from the computer hard drives, flash drives and cloud. The study results would also be published in a policy brief or conference paper.

4.12 Study limitations

Lesson observation in two classes revealed that teachers revised previously taught topics because schools were preparing for end of tem examination. This occurred because field research for this study was only possible during semester break as the researcher was attending classes with the program being a course work. As such, it was impossible to schedule the field research some weeks before end of the term because the researcher was busy with class work. The major limitation in observing such lessons was that they did not portray a true reflection of the normal daily classroom interaction and it could not be overcome with longitudinal research due to limited time available for field research in the program. Ployhart and Vandenberg (2010) define longitudinal research as the study done at a minimum of three repeated observations for the same subjects. However, in-depth interviews conducted after lesson observation helped to compare classroom practice and teachers response on their experience. Such interviews helped to clarify rationale for various class instructions and feelings of the teacher in attempt to engage all learners as the core principle of LCE in a large class

The in-depth interviews produced a lot of data and in instances where the participants requested for an off-record discussion in situations they felt they were giving sensitive information, it became challenging for the researcher to leave out the information during analysis. Some of the off-record discussions gave out participants' real feelings about the topic under study and they gave out their true experiences and rationale behind most of their practices. In order to build trust and confidentiality, recordings were paused and no note-taking was allowed. This in turn became a big challenge when trying to remember the discussion afterwards.

The study also experienced reluctance from participants to admit challenges as they think it is a confession of weakness and unprofessionalism. As such, people tried to be fancy in responses but in the course of discussion, all participants opened up and a lot of information came out. The research provided a clear explanation on the reasons for recording that included difficulty in comprehensively take notes, disturbance of the flow of the interview, duration taken and the need to get accurate information.

Finally, the research was very straining and tiresome as the area covered proved to be too big and required a lot of travel and a compressed program as the period approached the end of term examinations. It would have been difficult to continue with interviews during examinations period and during recess when people would have expected transport refunds and lunch allowances.

4.13 Summary

This chapter has described organization of the study that adopted a qualitative approach in investigating the topic under study. All the necessary steps in carrying out this study were observed including research design, setting, sampling and sampling methods, data collection and data analysis, data management, ethical consideration and study limitation. This chapter, therefore, compared the anticipated approach to actual experience through the participant recruitment and data collection exercise. Therefore, the next chapter presents data analysis.

CHAPTER FIVE: ANALYSIS

5.1 Introduction

This chapter presents the extent to which various players understand LCE, application of LCE principles in a large classroom setting, commonly used LCE teaching strategies, challenges experienced in implementing LCE, opportunity areas to build on and recommended practical suggestions to ensure that the learner really becomes the centre of the learning process.

A general assessment of all participants' responses indicates a considerable knowledge on LCE with challenges that hinder effective implementation in real class setting. The findings were as follows:

- The classes in the urban areas are bigger than anticipated with some classes left under the control of one teacher responsible for all the six subjects
- Mostly, teachers use group work methodology as a major approach that facilitates cooperative learning and vital in achieving learner-centred learning
- Class size limits effective implementation of LCE by hindering effective learner participation
- Effective implementation of LCE requires thorough content and material preparation combined with skillful delivery
- Overcrowding limits teacher's movements in reaching out to all learners
- Resource constraints in form of shortage of staff, limited teaching and learning aids make achieving active and participatory learning hard.
- Shortage of teachers leads to high workload and classroom behaviour management problems
- Too much syllabus content to cover forces teachers to prioritize syllabus completion rather than learners' comprehension of skills and knowledge
- Some of the challenges experienced in effective implementation of learner-centred approach are beyond the competent jurisdiction of the Primary Education Advisors
- Teachers lack comprehensive skills to effectively implement LCE in a large class setting because teacher education does not prepare them to handle large classes
- Continuous Professional Development (CPD), intensified monitoring and supervision are the most teacher support programs available

5.2 The large class setting

The study established that all classes in the schools visited are larger and more overcrowded than anticipated during the conception of the study. Most of the classes are double or more than the officially recommended number of 60 learners per class. For example, the study came across a large class of 350 learners under the control of two teachers. In this class, teachers operated from the middle. This situation makes it difficult to engage the learners in active and participatory learning as expressed by one respondent below:

> '*I stand in the middle of the class because is it hard for all students to hear me. Unfortunately, this makes me face some students with my back and I have to teach from the centre which is far from the chalkboard. I have to walk to the board every time I want to write and explain something. Such movements waste a lot of time at the same time tiresome'.* **TR9**

Shortage of teachers led to allocation of one teacher per class as an alternative measure to maximize the available limited resources and strive to achieve active and participatory learning which is the core of LCE. One supervisor explained that in principle, a class with 120 learners is allocated one teacher due to shortage of teachers as explained below:

> *'We have one teacher per class because of the shortage of teachers. In fact, we want each teacher to have his/her own learners in the ratio of 1:60 but mostly a class with 120 learners has one teacher. In cases where the number of learners exceed 120 we try to assign two teachers to the class.* **SR1**

The large and overcrowded class creates an environment that makes implementation of LCE difficult. Overcrowding limits teacher's movements and flexibility to reach out to other learners. One participant testified by saying that:

> *'Sometimes we go by the wall or wave the learners to squeeze so that we go through them to reach some groups because there is no space even between rows'.* **TR1**

It is, therefore, against this background that the study took the initiative to investigate how teachers effectively implement LCE in these large and overcrowded classes.

5.3 Knowledge and skills in LCE

Knowledge of the teacher, supervisors and inspectors on LCE is very important to investigate classroom practices. The level of knowledge and skills in LCE helped in investigating the

topic through the inquiry on the way teachers implement their knowledge and skills of LCE in a large class. The inquiry on knowledge and skills also helped to reduce the possibility of making wrong conclusions from the findings when teachers would fail to implement LCE due to lack of knowledge and skills instead of size of the class.

5.3.1 Active and interesting learning

The study found that teachers have a considerable understanding of LCE and necessary approaches that facilitates its implementation. For example, implementation of LCE requires making learning active and interesting. In doing so, teachers use positive feedback, thorough lesson preparation, content mastery, and material rewards to induce competition. Teachers also use songs as interludes to induce learners' interest and motivation to continue with learning. The responses below highlight various strategies teachers use to induce motivational learning.

> *'When you know the lesson well, you achieve learners' attention to the lesson. Lesson introduction and feedback giving make learners inquisitive to learn more. For example, hand clapping as appreciation for getting a task right, encourages another learner emulate the achievement to get a similar commendation'.* **TR1**

> *'As for me, I give incentives like sweets, bubblegum and money.* **TR7**

> *'Sometimes you stop the lesson and make them clap hands, sing, dance just to get their attention and then proceed with the learning. For example, I like doing the interlude below;*
> *Teacher: Mzanga! Mzanga! (My friend! my friend!)*
> *Students: Mzanga! (My friend)*-**TR1**

Some teachers believe that homework induces interesting and motivational learning through the support learners get from parents and guardians. On the other hand, homework demotivates learners who do not get the parental and guardian support at home and fail the homework. This is highlighted in the response below;

> *'Sometimes we make learning interesting by giving them homework which with the help of their relatives or parents they get the tasks right and feel motivated to work harder on the next assignment'.* **TR8**

Teachers employ all these mentioned strategies to ensure that the child is an active learner and that learning is very interesting. Teachers understand that active, participatory and motivating learning reduces the social gap between the teacher and the learner. The reduced social gap supports teachers in understanding student behaviour and design positive disciplining measures. As a result, the learner becomes part of the learning process instead of being sidelined as deviants.

5.3.2 Construction of knowledge

Discovery learning that provokes thinking facilitates interpretation of information in one's context. To achieve this, the pace of the lesson allows learners to think through the information at hand and sieve meanings from it. The use of teaching and learning aids helps learners to apply their knowledge and deduce meanings from them. In understanding the resource challenge faced in education, teachers are trained in improvising teaching and learning materials in the concept of Teaching and Learning Using Locally Available Resources (TALULAR). In using teaching and learning aids, teachers understand that active and participatory learning is a recipe for implementing LCE. This was reflected in the respondent below:

> *'In class, we use flip charts to assist learners understand the concepts better and the school have enough of them. Apart from flip charts, we also use locally available materials children bring to the class when assigned to do so. From the locally available material, we make drums using plastic papers, and they perform an alternative function to the one that uses an animal skin. We do all these things to make learning meaningful and active'.* **TR8**

5.3.3 Daily life connections

Relevant learning requires the ability of the teacher to make learning relevant to daily life through inference to what learners see, do and hear. Teachers use real objects like drums and counters to link up theory and practice. LCE emphasizes on supporting the learner make relevance to the content interacting with. One participant expressed knowledge of this in the response below:

> *'You could see in that lesson if there were no counters, that lesson could have been hard. Learners have to practically work out the problem in real life using tangible things like the counters because out there they also use physical things'.* **TR1**

5.3.4 Cooperative learning

Cooperative learning engages learners into team work interaction where they share and explore ideas together. The study found that participants understand small group work as the major strategy to achieve cooperative learning and learners are given similar tasks to discuss and make plenary presentations. Teachers regard group work as a relief to help them rest from continuous talking as expressed by one participant below:

> *'Learner-centred approaches are good because they give learners a chance to think quickly and respond to the questions. Such approaches allow teachers to talk less and summarized the discussions'.* **TR7**

5.3.5 Reflective learning

Reflective learning entails that teachers give feedback to what learners do and say. Teachers try their best to give feedback on previously assigned tasks, and calling a learner by name. The attempt is highlighted in the following statement:

> *'I know most of my children by names and I always try to call them by their names'.* **TR7**

Teachers understand the importance of knowing learners by their names and they make all their effort to know all learners but in large classes the process takes a longer time as expressed by the participant below:

> *'I only know 50% of the class but by the second term, I can manage to know all of them. I can say only I know the troublesome and the capable learners at first'.* **TR4**

5.3.6 The teacher as a facilitator

LCE requires a teacher to play a facilitator role and guides the learning process. Teachers spend enough time in material preparation to reduce talking time and give learners more time to engage with the content. The teacher sets the pace of learning and supports acquisition and discovery of concepts and knowledge. The teacher as facilitator recognizes the potential in learners and helps them develop confidence in the learning process. The study found that participants understand that teachers are not masters of knowledge but initiators of learning. The following responses attest to this observation:

> *'Our role is to support learners discover meanings from the content we give. This depends with what the teacher prepares for the learners. For example, thought provoking tasks make learners think through the possible answers and pick the best response'.* **TR5**

'LCE gives you break and rests because we jointly talk with learners and your major role is supervision unlike the lecture method which even its preparation is more intense and requires the teacher to overwork because all the teaching and talking is done by the teacher'. **TR3**

A teacher facilitator believes in the potential of learners and expects them to perform all tasks given. In that way, learners are entrusted with tasks as responded below:

'LCE is time where learners are assigned to do lessons on their own'. **TR4**

'*LCE is a system of teaching which involves learners contributing more in a certain topic'.* **TR7**

The teacher as a facilitator of learning allows more time for discovery and exploratory learning. The teacher supports learners by clarifying concepts and summarizing the tasks and meaning. One supervisor expressed this in the response below;

'The teacher is expected to only give the main concepts and let learners explore the rest'. **SR4**

Therefore, this section has presented inquiry results of LCE knowledge and skills teachers possess. The inquiry was guided by the principles of LCE that include making learning active and interesting, knowledge construction, daily life connection and curriculum relevance, cooperative and supportive learning, reflective learning and the teacher's role as a facilitator of learning.

5.4 Commonly used teaching methods that support implementation of LCE

The study found that teachers frequently use lecturing, group work, pair work, question and answer, and class discussions. On rare occasions, teachers use role-plays because it is hard to implement in a large class. Sometimes lecture methods are not regarded as inducing active and participatory learning. However, it depends with the extent being used. A participatory lesson uses a combination of teaching methods. In this regard, lecturing is limited to lesson introduction, clarification of concepts and conclusions. One supervisor stressed on the proper use of lecture method as important in achieve learner-centred education as highlighted in the response below:

'*Most of my teachers do not recognize lecture method as learner-centred. They think lecturing is just passive story telling that does not engage the learner. They think*

lecturing is just a matter of pumping information into learners' heads. As such when you go for supervision you find teachers giving learners tasks they cannot explore on their own because they think that if they explain to the learners, I will accuse them of lecturing'. **SR4**

Only one participant mentioned to have used role-play done in small groups or learners were taken outside for enough space as reported below:

'To achieve LCE we use teaching methods like role-play whereby two or three learners can do the role-playing within their groups. However, because the class is too big, sometimes we take them outside for a larger space but it is time-consuming'. **TR8**

Group work as a method that induces LCE requires proper application. For example, members of the group should be rotated and groups assigned different tasks for wider coverage of the content. The groups should as well be given opportunity for plenary presentation. The study found that in the classes where lessons were observed, groups were permanent and arranged based on proximity with people sitting next to each other. These groups meet in permanent places where movement is very limited due to lack of space. As such, these groups were referred to 'sitting groups' rather than working groups as expressed below:

'*Honestly speaking there are no working groups in these classes. What we find are sitting groups because they are permanent groups when working groups require rotation of members but it does not happen. You will also see that the groups are not the same as one group could have about 25 members when another group has only 11 members'.* **IS.**

5.5 Challenges experienced in implementing LCE in a large class setting

5.5.1 Difficulty in choice of applicable teaching methods

The study found that teachers struggle to get teaching methods that would really work in the large class environment. In so doing, teachers' choices are limited by space and time to monitor the tasks. In practice, 'talk and chalk' method is dominant because the class size limits the effective use of other participatory methods. Teachers accepted that even group work is not effective in their environment, but they are forced to do it as a requirement in the current LCE practice. This is highlighted in the response below:

'We fail to use and practice group work because it needs enough space and our classes are too big and overcrowded. For example, we only need 6 people in a group and in a 350 learners groups of 6 would be impossible to form. Too many groups in a class cannot be properly monitored and managed'. **TR8**

Considering that group work is very difficult implement in a large class, teachers use individual or pair work. These methods as well have challenges of supervision, monitoring and giving learner feedback. One teacher explains it as:

'Usually we do not use individual work because it becomes too much for one teacher to manage a lot of children individually. As such, its usage is limited to the end of lesson when assessing learner's acquisition of the skills and knowledge'. **TR1**

Teachers avoid using role play because it arouses excitement and interests that in turn lead to classroom behaviour control challenges. Role-play requires enough time and space to demonstrate to the class. As such, a large and overcrowded class does not provide enough space for role-playing making teachers rarely use the methods.

'We cannot do role-play in class because there is no space for that. As such, we use a lot of class discussions, explanations and songs'. **TR8**

'For example using role-play means making the class too noisy as such teachers shun away from such methods'. **SR1**

The theoretical aspect of role-play propagates that learners can do role-plays in pairs and the selects one group to role-play in front. However, practically, it implies loss of control for the class and all groups cannot be monitored

5.5.2 Limited time to complete the syllabus

Making learning active and participatory calls for the teacher to engage learners in more discovery, critical thinking and analytical learning. However, ensuring participatory learning in a large class challenges the timely completion of the syllabus. As a result, most often they resort to lecturing and giving out more information in order to move at a good pace with the syllabus. This is highlighted in the expression below:

'LCE implementation requires a lot of time. For example, the teacher is supposed to assist individual groups that are failing the tasks assigned within the 35 minutes of allocated lesson time. When monitoring one group you find that another group is busy

doing something else that's why we shun LCE and resort back to lecturing method'. **TR6**

5.5.3 Classroom behavioral management

Teachers handling large classes face classroom behaviour management challenges. Considering that focus on individual learners is difficult in a large class, learners switch their attention to other things. For example, fighting and playing during lessons is common among learners because they know that the teacher is not able to pay attention to every learner. For example in one of the lessons observed, learners could chat with friends from the window, some were fighting, playing, focusing on other subjects like reading English textbooks, looking at pictures in the textbooks, drawing cartoons, and playing with papers in making aeroplanes. In this lesson, movement of learners to and from class was done without teacher's permission and the teacher was not concerned with the practice. An inquiry with the teacher of the reasons behind failing to control learners' classroom behaviour indicated that handling a large class is tiresome and because implementation of LCE teaching methods is hard, teachers become demotivated with the work. This was highlighted in the expression below:

'*Those of you with notebooks and pencils keep on writing and leave those without alone; we don't come to the garden without a hoe'* **TR4**

5.5.4 Failure to provide timely and relevant feedback on learner performance

Implementation of LCE requires teachers to give timely and continuous feedback on learners on the tasks performed. Teachers handling large classes fail to complete marking the work given to learners thereby denying learners access to individual feedback on work performed. For example, during one lesson observation, the teacher spent almost 20 out the 35 minutes lesson time marking notebooks but failed to finish marking. As a result, the teacher collected all notebooks intending to mark during break time but failed to do because break time was not enough. In situations where one teacher handles the class alone, marking is very complicated because during break time the teacher needs to rest in readiness for the next class. In the junior and senior classes, teachers use learners to exchange notebooks and mark for each other. When learners exchange notebooks, teachers are expected to do a random check. Unfortunately, this strategy does not work to infant section in standards 1 and 2 as the children are young and cannot be trusted with marking. Even when learners exchange notebooks, the teacher is supposed to crosscheck but class time does not permit this. The

response below shows that giving individual feedback to learners in a large class as required by LCE is very difficult;

> *'If I am to mark every notebook then I will stop teaching and be marking'.* **TR2**

In an attempt to find alternative and give feedback to learners, teachers are advised to give more examples and reduce the number of tasks because parents complained over learner's unmarked notebooks. The expression below shows acceptance that implementation of LCE in a large class faces a lot of challenges;

> *'35 minutes cannot work to complete marking no matter how fast one can be. The only solution is for the teacher to give more examples during lesson delivery. A teacher can demonstrate two examples, and then assign a third example as a group task before giving them homework'.* **SR1**

Despite getting the advice of reducing individual tasks, teachers fail to complete marking because the number of learners is too big.

5.5.5 Large class reduces learners' work intensity and assessment

The reduction of class tasks and increase in examples works to the advantage of the teacher rather than the learner. Learners need more engagement with the content to construct their own meaning from understanding the content before them. Therefore, considering that individual learner assessment is difficult in a large class, teachers give feedback to learners as groups, which can be described as 'wholesale' teaching. Group feedback overlooks individual learner differences and competence because groups are treated as homogeneous. The response below confirms this observation:

> *'We end up teaching a group rather than individual learner. It is hard to assess each learner and we end up assessing a group. For example, in that group work, I ended up saying 'this group has done well' meaning you include everyone even those that did not get the task right. Not every learner participates in such environments'.* **TR1**

5.5.6 Large class limits learner participation

Giving equal chances of participation to learners is very difficult in a large class. As observed in some classes especially in the infant session, when a teacher poses a question almost every learner puts up a hand but only one is chosen to answer. Other learners are given opportunity in next lessons or in other days. However, in a large class, rotation of opportunities is hard to reach to all learners. Further to this, small group work does not exist in a large class because

groups formed are larger than normal. For example, groups observed in the study had 17-25 members and they cannot be called small groups. When some learners do not have the opportunity to contribute, they divert their attention to other things as reported by one of the teachers below:

> *'In my class, I have 8 groups and each group has more than 20 learners and that is not good. It is only a few learners who are participating and some are just playing and making noise'* **TR4**

Teachers agree that learners sitting at the back are the most affected by lack of participation because in most classes teachers do not move to the back due to limited space. However, there were different views regarding who benefits more between learners sitting in the middle and those in front. One teacher believes that learners seated in the middle of the class benefit more from the learning process as the teacher mostly does not focus on the closest learners. This was reported as follows:

> '*Because the classes are too large, teachers do not like moving around, so they left the front and enter the crowd but stop along the way giving many benefits to learners in the middle. When a teacher poses a question, eyes always focus on the middle neglecting those close to them and at the back'.* **IS**

Another teacher held a different opinion by expressing that, learners closest to the teacher benefit more than the rest in this expression:

> *'Mostly, children who sit in front benefit much and grasp more concepts faster as well as their friends in the middle and at the back. Therefore, it is hard for me to pick up learners at the back'.* **TR2**

5.5.7 Limitation on effective provision of instruction

A large class limits comprehension of instructions necessary for successful completion of class tasks. Comprehension of instructions contributes to successful completion of tasks. The study found that a large class makes it hard for learners to clearly understand instructions. As such, the teacher is expected to move round the class when learners are attempting the task to check on whether the task is being done as expected. Considering that individual support in a large class is difficult, teachers repeat instructions to the whole class on several occasions. The lesson observation witnessed an occasion whereby one learner requested for clarification

on one aspect and the teacher responded by repeating the whole instruction. This kind of response generalizes an individual problem.

> '*I knew that other learners would also complain about the same thing, so I thought it was better just to explain again to the whole class and avoid getting similar questions from individual learners. If I continue entertaining individual complaints then I will not teach and the whole time will end with clarifying instructions. That is why in the end I just wrote the instructions on the board for all of them to read'*

To ensure that instructions are clearly heard and understood, teachers need to explain despite writing them on the board. Unfortunately, teachers shout to be heard, and they become strained and exhausted. For example, during lesson observation, one teacher had lost her voice because of shouting.

> *'I lost my voice because every day I come to shout at learners instead of teaching them. You can see that communicating to all these learners is not easy unless the school buys us megaphones to use in class but that as well would disturb other classes. My class is too big and being an infant section you know children always make noise and it's always a competition with noise'.* **TR2**

In response to this, one supervisor attributed the loss of voice and fatigue to lack of adherence to learner-centred principles by expressing that:

> *'Group work helps teachers to rest and observe unlike keeping on shouting the whole time. That is also time-wasting because the teacher is trying to be the major player'.* SR5

5.5.8 Limited monitoring of assigned class tasks

The study further found that overcrowded classes limit teacher's movement around the class to monitor the assigned group tasks. For example, one participant complained that going through rows require learners to give way and sometimes they jump over learners legs in classes where they sit on the floor.

> *'Sometimes we go by the wall or wave the learners to squeeze ourselves through them because we want to reach learners at the back'***. TR3**

Two supervisors concurred with teachers that class size poses a very big challenge in the implementation of LCE in the following expressions:

'LCE cannot work in a large class, maybe it can work if we have more teachers and teamwork can work in such class as well. If there are three teachers handling 150 or 180 learners then maybe that can work'. **SR4**

'LCE is not working because our classes are too big and it's very challenging. Usually, we do not achieve LCE because of the number of children in the class. Only children that are closer to you get much information and those you come across when going around the classes. **SR1**

5.5.9 Inadequate teaching and learning resources

Implementation of LCE requires adequate human, material, financial and infrastructure resource. The study found that effective implementation of LCE in large class is hindered by shortage of teaching staff, shortage of teaching and learning materials and the competency gap of teachers on LCE methods that works better in a large class environment. This section presents evidence from the participants to highlight the extent of impact these factors have on implementation of LCE in a large class setting.

5.5.9.1 Shortage of teaching staff

Effective handling of large class requires more teachers to support each other in monitoring class activities like group work, and marking. The high enrollment of learners has resulted to creation of large classes that are under the command of one or two teachers only. Shortage of teachers led to the assignment of one teacher per class teaching all subjects. The situation makes some teachers ration the subjects by choosing what to teach on a particular day and leave other subjects for the next day when children are supposed to learn all subjects every day. The study also found a class without a permanently assigned teacher and could not be combined with another class because all classes were too big to be combined. As a result, teachers from other classes share the responsibility to cover up the class. Absenteeism of one teacher from the other classes requires getting someone from a different class level to teach. Such an arrangement limits the participation and activeness of the class as the teacher lacked enough time to prepare for the class. The arrangement affects continuity and learner's building knowledge on previous sessions since the teacher starts on a new page. However, it is very challenging to the implementation of learner-centred as expressed by one supervisor as below:

'We face challenges of teacher absenteeism which makes it hard to implement LCE in our classes. Mostly it is challenging for supervisors to advise teachers on what to do when we know that what we are telling them is hard to implement' **SR2**

5.5.9.2 Shortage of teaching and learning materials

Implementation of LCE demands adequate availability of teaching and learning materials and infrastructure. The study found that most schools have open space classes are created under trees and behind school blocks. These classes are distracted by noise from passersby and other activities around the community. The situation then requires more teachers to support each other in ensuring that attention of learners. The study found that most of these classes have one teacher and usually races through the lesson and allow learners to knock off earlier preventing them from the scotching sun. During rainy seasons, open-air classes have the option of either being dismissed or combined with another class that learns inside whenever possible. Similarly, teachers in this environment have pressure to complete the syllabus and once classes resume, learners' active participation is not prioritized in fear or derailing the lesson as recalled by one respondent:

'*You see my class is here outside and look at the shade and see those children on the sun. I always try to cover as much as I can to allow the learners go home because this is equivalent to child abuse. If this class was small then they would have fit within the shade of this tree. This is also an open space where the voice is spread out and when I try to shout instructions to all learners children from the nearby houses laugh or imitate what I say which is very disturbing. As such, I am limited in the approaches I do. One time I tried to do role-play but this place was full like we are doing open-day activities'* **TR4**

The study also found that schools face challenges in procuring enough teaching and learning resources that matches the number of learners in the schools. Teaching materials support the construction of knowledge from an interpretation of visual aids. The use of teaching resources induces interest and facilitates reflective learning. Therefore, TALULAR becomes the available alternate solution to the situation. In order to source teaching materials locally, teachers buy or draw up some materials, and they request learners to bring real objects they can collect from home. Through the TALULAR committee, the community is engaged in supporting getting more teaching materials. However, the study found that the approach to some extent faces resentment from parents who argue that provision of teaching materials is

the responsibility of government rather than parents. As responded by one supervisor below, the contention comes in light of free primary education in existence:

> *'We have a TALULAR committee comprising teachers to ensure availability of locally available teaching resources at the school. We choose teachers who are talented, and we created TALULAR bank that keeps all the materials created. Our biggest challenge is where parents need to buy such materials and parents become reluctant because in the urban mostly it is challenging. People think because education is free then they do not need to spend anything in supporting the education of their children'.* **SR2**

5.5.10 Competency and capacity gap of teachers

The study established that implementation of LCE is very challenging because teachers are not specially trained in specific methodologies that induce active and participatory learning in a large class setting. For example, participants understand the importance of using small group work to achieve active and participatory learning. A normal group is supposed to have 6-8 members who are periodically rotated, and are gender represented wherever possible. The study found that teachers fail to effectively use the LCE methodologies in situations where groups have 17-25.

Teachers undergo training that assumes a class size of 60 learners when in reality classes in have double-sized classes. The study found that only four of the 56 schools in the study area have small classes of less than 60 learners and these are mainly located in the business and industrial centres and service a small community. Student teachers sent to the highly populated schools are given specially created classes of 60 learners. Such creation leads to the distribution of learners to other classes thereby contributing to creation of large and overcrowding classes. Unfortunately, when the student teachers complete their education, they find it hard to handle classes of more than 60 learners and fail to implement the LCE methodologies learned at the training college to the new environment with more than 60 learners. One participant said:

> *'The teacher training somehow is having a blind eye because what the student teachers are going through is not the current situation in the schools. They are supposed to be given the whole class instead of creating a class of 60'* **SR5**

Teachers lack special skills in completing other teacher documentation like performance checklist, registers, record books because they lack the skill when faced with more than sixty learners.

> *'Completing checklist is a bit easier when the teacher knows the learners because it can be done even at home because you know who answered the questions in class and can be completed so there is no need to cheat. We advise our teachers that they have to know their learners so when doing revision they target learners that did not answer questions yesterday'.* **SR2**

Provision of feedback and individual support to learners is one of the important elements of LCE. Good feedback is provided when a teacher maintains the performance and attendance record of every learner. Unfortunately, a large class makes it difficult for a teacher who handles a class alone to complete learner's performance and attendance record hence affects teachers' ability to provide constructive feedback to learners. One participant complained in the response below;

> *'I have 286 learners as you saw it in class. I have to complete marking, teach, do corrections, complete the class register, and fill in checklist and performance records every day. This is not realistic'* **TR5**

However, other supervisors attributed the whole problem to lack of teacher dedication and professionalism as argued below:

> *It is just laziness otherwise; it is not too much work for the teacher to complete a checklist. This is what we always encourage them to do as we do the supervision. Some are doing it and others are not doing it…the methods are effective but teachers are not comfortable, and they forget that learning is a permanent change of behavior'.* **SR4**

5.6 Response programs

In order to address the challenges presented above, each zone and individual schools have various response programs to support teachers' capacity and competence to effectively implement learner-centred education methodologies in the large class environment. The study found the following programs to exist:

5.6.1 Continuous Professional Development workshops

Continuous professional development sessions are conducted to build teachers' capacity in implementation of LCE. These sessions are either initiated by the schools or zones. Individual schools conduct CPDs every month while zonal CPDs are planned once per term during school recession. The study in this regard, found that CPDs have been conducted in writing schemes of work, marking, essay writing, teaching resources development, school leadership and participatory learning. Through the professional development sessions teachers are trained to give more class tasks and fewer individual tasks for easy marking.

5.6.2 Financial resource grants

Schools are entitled to the School Improvement Grant (SIG) allocated based on the number of learners. This implies that all schools visited receive larger amounts of the grant for use in procuring teaching materials and training teachers in special skills depending on assessment needs. The study found that some schools involved in the study got about K3, 000,000.00 (R48, 300).[2] The comment from one supervisor confirms this finding as reported below:

'50% of SIG is supposed to directly benefit the learner through buying teaching and learning resources and conduct professional teacher development. The zone receives ZIG which is sent to schools and each school is really utilizing' **SR1**

5.6.3 Creation of resource centres

Considering that TALULAR corners are challenged by limited space in the classrooms. The study found a shift towards the creation of resource centres to recollect and keep all teaching and learning materials used for further reuse. These centres were being established in specially built structures with support from the community and school development fund. The idea anticipated that over the time, schools would build very strong resource centres where other schools can borrow teaching materials.

5.6.4 Intensified class supervision and monitoring

Zone supervisors use feedback sessions to support teachers on areas that require further attention in the implementation of LCE. The feedback sessions are reflective meetings between the supervisor and the teacher by going through the lesson observations. During these supervisions, the teachers are encouraged to implement team-teaching because the work is too much and hard for one teacher to handle classes of more than 60 learners every day.

[2] Exchange rate 1 ZAR=62.1813MWK available at https://www.exchangerates.org.uk/South-African-Rands-to-Malawi-Kwacha-currency-conversion-page.html accessed on 15/02/15

5.7 Practical suggestions

The study revealed a general agreement to the benefits of LCE both to the learner and the teacher. To the learner LCE helps the learner to take a leading and active role in the learning process while to the teacher LCE is a breather that gives rest and saves energy. The following were some of the suggested solutions from teachers and supervisors:

5.7.1 Reduction of class size

Participants suggested a reduction of class size as the best solution to ensure effective implementation of LCE because a large class makes the teachers' roles of facilitating learning difficult. Reduction of class size can happened through splitting of classes and construction of other schools to reduce the catchment area.

5.7.2 Increased number of teachers per class

Reduction of class size by splitting requires employment of more staff to take charge of the other classes. However, employment of more staff is a long term solution that depends on availability of resource to support the recruited staff and construct more learning structure. It is believed that more staff in the same large class would support the implementation of LCE. This was clarified in the response below;

> *'I am just alone, so I sometimes choose to teach one or two subjects and give class work during the rest of the session. Had it been that we are two it would have been easier to teach. These are children unlike the senior classes you can do mathematics and Chichewa then break then you can mark only two subjects'.* **TR2**

5.7.3 Skills and capacity development

Considering that reduction of class size depends on huge financial availability for construction of classrooms and employment of staff, participants view skills and capacity development workshops as a short term solution. Teachers need skills in LCE methodologies that are practical in a large class setting. The study observed that teachers are overwhelmed with the numbers in class and fail to adapt to the situation. This implies that teaching skills theory fails to match with practical classroom situation. For example, some participants had difficulties in controlling and monitoring groups of 17-25 learners as required in LCE.

> *'I cannot put them in groups as required with congestion in class you can see that it is small. So 120 learners will have more groups that is why I just put them in rows so*

that when one is talking they should hear each other as such group monitoring is not possible'. **TR2**

'Our teachers lack skills and techniques to implement LCE in large classes. As a zone, we help teachers to first identify brilliant students in the class before they form groups. Once they do that, they will find group work easier to implement. Moreover, once they identify such learners they will be able to use them as they move from one class to the other. This helps to remove the lowest failure and create the least as average students. Our teachers are failing to identify fast learners and slow learners; as a result, they fail to support the learners'. **SR5**

5.7.4 Provision of more teaching and learning resources

LCE is resource demanding to achieve reflective, interpretative, and relevant learning. Teaching aids help to add practicality to the content whereby learners form pictures to memory that helps them easily remember what they learn. As such, learning becomes more outcome and skills development centred. The study found that mostly, schools have flipcharts as the commonly available teaching resource with other schools being the only available resource. For example, lesson observations witnessed teachers using flipcharts for pre-lesson notes preparation and one teacher used it for pictures and drawings. Therefore, teachers suggested the intensification of procurement of other teaching aids like chart pictures and maps. In this regard, one teacher shared that using learners' drawing skills helps to get other teaching aids locally.

'Sometimes we cannot manage to draw ourselves, so we use upper classes like standard 7 learners'. **TR3**

5.7.5 Collaborative teaching and learning

Participants suggested emphasis on team teaching and advocating for parental support to their children on homework. Teachers feel that parental support is vital to enhancing learner's interest in education as recalled below;

'When learners are assisted at home we are proud that the learner has learned something. As such, learners become interested in homework because they know that they are learning something. However, some learners are not interested in the homework because it takes their time to play and parents are not interested in helping them do their homework'. **TR5**

5.7.6 Creating a conducive teaching and learning environment

Participants suggested that teacher motivation through provision of hardship allowance would persuade them into implementing LCE despite the class size being larger than normal. Lack of dedication was referenced to their counterparts in the rural areas who handle classes below 60 learners but are paid a solace rural hardship allowance. This was highlighted in the response below:

> *'The Ministry should abandon the program of sending teachers to rural areas because they are too many now with a few learners in class while here in the urban the situation is worse and those people get allowance while here we do not and this is not fair'.* **TR8**
>
> *'Why should I teach 239 learners and someone says this is not hard work? We also deserve the hardship allowance'.* **TR7**

5.8 Summary

This chapter has presented findings from the study touching on participants' knowledge of LCE, common teaching methods believed to induce learner-centred education, support programs available for effective implementation of LCE. The chapter has further highlighted aspects of a large class that limit effective implementing LCE. Finally, the chapter has presented suggested solutions from participants as to how the approach can be embraced effectively. The next chapter presents conclusions drawn from these findings.

CHAPTER SIX: DISCUSSION AND INTERPRETATION

6.1 Introduction

This chapter presents a summary and discussion of the findings from the study in relation to participants' views on the feasibility of effectively achieving active, participatory, reflective, and discovery learning in a large class setting. A large class in this context referred to class with more than 60 learners interacting with a teacher at a time (, MoEST, 2015; Lee and Zuze, 2011; Motshekga, 2012; Phurutse, 2005). In investigating this topic, the study assessed participants' level of knowledge and skills in LCE, LCE teaching methodologies applicable in a large class, experiences and challenges of teachers, and supervisors in implementation of LCE in a large class. The study further investigated supportive programs available to assist teachers implement LCE in a large class context. The findings indicate that implementation of LCE in a large class setting is very difficult although teachers put much efforts to ensure its effective implementation.

6.2 level of knowledge and skills in LCE

The first objective of the study was to describe teachers' understanding of leaner-centred education. In this view, the study found a basic and theoretical understanding of learner-centred approaches among teachers and supervisors. Enhancement of this knowledge and skills acquisition is supported by the In-service training programs run by schools and the education zones. Comprehension of considerable knowledge and skills in LCE is very critical to the practice of LCE. Teachers who are knowledgeable and skilled are able to work out on what works and does not in accordance to specific situations. As such, the knowledge and skills are an opportunity to build on and develop best practices in implementation of LCE. For example, in making learning interesting, active and motivating, teachers use various mechanisms that include immediate feedback on completed task, thorough lesson preparation and mastery of the teaching content. Through lesson observations, it was discovered that teachers use song interludes to maintain learners' attention. Sometimes homework is used to keep learners active even after school and bring in the support of parents and guardians.

The deep knowledge and skills on LCE help in flexibility of teachers to apply the concepts selectively as determined by the learning environment. For example, in order to overcome challenges of managing group work, teachers support each other in monitoring, marking and behavior control. Teachers also know that giving feedback to learners help them reflect on weaker areas and desire to build on their opportunities. Therefore, in order to give effective

feedback, teachers work hard to know all learners by names by the end of the term though due to many learners they fail to achieve it. In the study, all participants agreed to the role of a teacher as a facilitator of learning rather than expert full of knowledge to impart to learners. Participants understand and recognize learners as potential partners and subjects of the learning process, and they guide lessons and class activities as expert facilitators. O'Sullivan, (2004) in the study on the *Reconceptualization of learner-centred approaches* in Namibia targeting 145 primary school teachers found that a teacher facilitator is responsible for setting up instructional learning. Further to this, teachers know that lecturing is limited to explaining concepts and giving instructions.

However, possession of this knowledge does not always translate into effective implementation due to challenging teaching and learning environment created by a large class setting. This finding concurs with Mdolo, (2017) in the study on *Conceptualization of the learner-centred approach to pre-service teachers* in Malawi and Kaphesi (2017) on *Learner-centred teaching and learning of Mathematics in Malawi.* The two studies found that regardless of knowledge on learner-centred approach, practical teaching remains teacher-centred. The studies further found that teachers were reluctant to play the role of facilitating learning for fear of losing their authority and respect as the masters of content. These results show difficulties in embracing supportive teacher-learner power relations dominant in learner-centred approach. Teachers feared the loss of class control and being underrated as unprepared and lack content mastery skills.

LCE promotes a shared responsibility between teachers and learners for effective knowledge construction. Contrary to this, findings in this study at primary school level found that teachers agreed to the benefits of LCE and were eager to apply it but their environment was cited as the major limiting factor. This suggests that training in LCE at primary school is more comprehensive than at secondary school level. One of the reasons might be that introduction of free primary education in 1994 led to high pupil enrollment and very large classes which has drawn the interest of stakeholders to ensure that learners get the optimal good of educational outcome.

The study also found that teachers use various teaching aids that are attractive to induce interest and facilitate discovery learning. In situations whereby the school fails to procure teaching aids, teachers source materials that are locally available at a very low or no cost.

Such materials include real objects that support the linkage between theory and real-life situation. For instance, during lesson observation, one teacher used counters in doing addition and subtraction mathematics and in another lesson the teacher brought a dry fish to class to support understanding of some concepts in fish. Therefore, high enrollment in the school puts pressure on sourcing more and varied teaching and learning materials. Unfortunately, most schools despite getting SIG limit their procurement of teaching materials to flip charts and Pental markers. The study concludes that knowledge and skills in LCE on its own does not guarantee implementation on the ground. Several factors affect the implementation one of which is size of the class due to its limitations on effective practice.

6.3 Commonly used teaching methods that supports implementation of LCE in a large class

The study finding indicates a range of methodologies that support implementation of LCE. These methods include group work, pair work, question and answer, role-play, and class discussions. Some of these methods work better in a small class setting because they need close supervision and monitoring of their implementation. For example, group work requires a smaller number of members who keep on rotating to give learners a chance of interacting with others. When the class is large, space to form the groups is limited and a group has more members than the expected and rotation of group members is difficult. A large class that is handled by one teacher is hard to give individual group feedback and monitor all groups while working on the assigned tasks. The study found that teachers shun the use of role-play because monitoring is very challenging hence limiting the choice of teaching methods that induces active learning. Therefore, a large class inhibits the translation of LCE theory into practice by making teachers resort to continuous lecturing that does not effectively support implementation of LCE.

The study finding of teachers overusing lecturing without engaging in its technical tactics shows lack of specialized training in teaching methods that practically work in a large class to induce LCE implementation. Lecturing is a method that when skillfully used in large class induces active and participatory learning. Lecturing can be an LCE method when used with voice, gesture, and movement variations, illustrations and demonstrations. This limitation on teaching methods deprives learners the opportunity to engage themselves with the learning content through analysis, practice and discovery learning. When teachers overuse lecture method, they are glued to ‘chalk and talk’ (Opoku-Asare, Agbenatoe and DeGraft-Johnson,

2014;128). They also end up shouting in an attempt to be audibly heard by all learners. As a result, learners become passive recipients of information that does not translate into mastery of the skills and knowledge. Within the same limited spaces reserved for the teacher, change of positions help to draw the attention of the learners to the teacher (MoEST, 2004). Facilitating a participatory and active learning is possible with a combination of several teaching methods during the same lesson.

6.4 Challenges experienced in implementation of LCE in a large class setting

The third objective of the study was to discover challenges and experiences of teachers in implementing LCE in a large class environment. The study found that teachers face various challenges in implementing LCE in a large class. For example, presence of more learners under the control of one or two teacher has a multiplier effect of other challenges emerging from the situation and they limit the teaching practice. The challenges are discussion below:

6.4.1 Failure to offer individualized support to learners

LCE envisages paying much attention to the capabilities of the individual learner. A large class exerts more pressure on the teacher to complete other academic related tasks monitoring, marking, material preparation, behavior management, instruction giving, and learner feedback. Instructional delivery becomes shouting which is an unsustainable and unhealthy situation to a teacher. The intensity of performing the mentioned tasks by one teacher in a large class becomes tiring and exhaustive. As a result, the teacher fails to adequately engage learners in active knowledge construction process. Oliver and Reschly (2007) argue that a teacher can reduce the work intensity by giving an appropriate assignment, and adequate lesson preparation that arouses learner's interests to work with minimum supervision. However, this solution seems workable in a normal class size of learners below 60. Therefore, constructive learning in large class with a demotivated teacher who is pressured by the higher workload that combines academic work and class managerial tasks remains a huge challenge to achieve. This, in turn, limits realization of optimum returns in education.

The study results indicate that provision of individual support and feedback to all learners in a large class is very challenging and learners with greater abilities benefit more than their counterparts who need special support. Providing individual support to learners helps to develop motivation, interest, courage, confidence, and desire to achieve more. This result

concurs with Benbow, et al. (2007) findings in the study on large class in developing countries that large class creates poor teacher-pupil engagement. Considering that, the learner-centred approach is meant to achieve quality and relevance of education, it can be assumed that motivated learners are more likely to remain in school and contribute to the increased access to education.

Lack of individual feedback makes learners feel dejected and isolated from the learning process. Since individual learner feedback is hard, teachers resort to group feedback as an alternative. However, the strategy as well disadvantages slow learners because teachers end up relying more on gifted learners who in the end determine the pace of the lesson. A study by Msukwa (2017) on effective use of group work in a large class in Malawi and Opolot-Okurut et al. (2015) in Uganda, found that knowing learners by names helps to avoid concentration of feedback on gifted learners and broaden the space for more learners' interaction. The big question on knowing learners by names is the practicality of the task in a class with 350 learners. This shows the extent and difficulty of implementing LCE in a large class context.

6.4.2 Teacher competency and capacity gap

The study found a competency gap in teachers to specially implement LCE in a large class context. A large class scares away teachers who become overwhelmed and lose confidence to attempt using LCE methods. A combination of factors like handling a class alone, lack of inadequate teaching and learning resources, and overcrowding in the class reduces the morale of the teacher. As a result, teachers resort to the 'talk and chalk' method which they feel is better for them. This implies that teachers choose teaching methods that suits them and not learners. Then the practice becomes teacher-centered instead of being learner-centred. Teaching a large class limits the innovation and resourcefulness of the teacher. For example, sourcing teaching materials for over one hundred learners where the school does not provide is very difficult. In some occasions teacher spend personal finances that are non-refundable and the practice is unsustainable. Therefore, a large class environment reduces the competency of teachers to implement LCE effectively leading to abandonment of the approach in some instances.

6.4.3 Availability of teaching and learning resources

The study found that all schools face the problem of inadequate resources. A large class setting increases the magnitude of the problem because the available resources seem to be too little and sometimes hard to use. As such, teachers abandon them and keep explaining the concepts without reference to any material. To overcome this challenge some schools have attempted to establish TALULAR corners or resource centres where all collected materials are kept for future use. The initiative faces two major obstacles of lack of space in class for the resource corners because most classes are overcrowded and leave no space for the resource corners. The urban set up limits availability of local resources as most places where learners can get them are privately owned and prohibited. As such, learners end up sourcing the required materials in dumping sites, which is a health hazard practice. The problem of resource constraint is not distinct to Malawi as Opolot-Okurut et al., (2015) found that most developing countries fail to raise enough teaching and learning resources due to their lower national incomes. The constructivism learning theory entails that creation of understanding is facilitated by interaction with the environment

The constructivist learning theory requires strong engagement with the content to give learners a strong basis for construction of their own knowledge. It is therefore plausible to conclude that task intensive methods like problem-solving, creativity and critical thinking are sidelined because the teacher reserves energy to carry on for the rest of the day. For example, a teacher who single-handedly manages a class of about 286 learners cannot effectively create an interactive learning environment throughout the day. However, lessons from the class observation point that lecturing in a large class is also very tiring than using learner-centred approaches because teachers talk too loud to be heard by all learners and wrestle against.

6.4.4 Teacher-education and practical classroom situation

The study found that student-teachers in their classroom teaching practice are not exposed to the large class setting as commonly prevalent in Malawi. Rather, they are provided with specially created classes of 60 learners taken out of an existing large class. This arrangement de-constructs an existing class whereby some learners are combined to other streams. It serves to align the student teacher's class to teacher education theory and assessment models. The study argues that the arrangement benefit learners who found themselves in the special class as they have increased access to individual support from the teacher. The arrangement

further disadvantages learners who are pushed to other classes ending up creating an overcrowded class. Nonetheless, the arrangement does not support professional teacher development, as they mostly not handle small classes after graduating from their training program. Therefore, to some extent, teacher-training education does not correspond to the actual needs and demands of teaching practice. Morrison, (2009;174) in the study on *negotiating learner-centredness classroom* in Pennsylvania found a blurred relationship between teacher training theory and practice in that approaches to teacher education rely on the transmission of a codified body of knowledge and methods that fail to account for the complexity of the teaching and learning process. A study on education quality in Azerbaijan, Kazakhstan, Kyrgyz Republic, Tajikistan and Uzbekistan found that lack of teacher preparation on specific challenges of LCE teaching methodologies fails to provide relevant models that are practical in different classroom settings (Schweisfurth, 2011).

6.5 Summary

The chapter has discussed interpreted the study findings presented in chapter five. The study findings show that teachers' considerable knowledge on LCE fails to effectively translate into practice because the learning environment is very challenging. Therefore, there is need to build capacity of teachers in special skills that are practical in teaching a large class considering that building more schools and employment of more teachers are long term ambitions.

CHAPTER SEVEN: CONCLUSION AND RECOMMENDATIONS

7.1 Introduction

The chapter concludes the study by summarizing the major study findings in relation to the objectives set in the study. The study objectives focused on assessing teachers' knowledge and skills in learner-centred education, commonly used methods that induce active and interactive learning, challenges teachers face in effectively implementing LCE in a large class environment and teachers perceived strategies to overcome the challenges experienced.

7.2 Conclusion

The study found that teachers have a theoretical understanding of LCE but limited skills in its application to a large class context. For example, teachers know the general strategies of making learning active, interesting, participatory, discovery and reflective to support construct their own knowledge. Teachers understand their role as facilitators of learning in providing expert guidance and controlling the learning process. However, large class size creates a difficult environment to put into practice their knowledge. As such, most of LCE teaching methods are not practiced and teachers are limited in the choice of teaching methods that induce LCE in the large class context. As a result, they frequently use few methods of discussions in small groups, pairs and as the whole class, lecturing and question and answer. Further to this, practice of these teaching instructions lack expertise to match the context. The capacity gap is a structural problem emanating from teacher education program that does not adequately prepare teachers to handle large classes. This in turn, shows a gap between LCE theory and practice in a large class setting.

Further to this, combination of overcrowding and the large class size exerts a double pressure on the teacher resulting in heavy workload, limited assessment and learner feedback, inadequate teaching and learning resources, and limited choice of teaching methods that induce participatory and active learning in a large class environment. In order to address these challenges schools and the zonal education centres conduct continuous professional development workshops on identified teacher capacity gaps. The Ministry of Education Science and Technology introduced ZIG and SIG to support teacher development through procurement of more teaching and learning resources.

The challenge of large class can be averted by construction of more school blocks to split up large classes. Construction of new schools in other townships would also help to reduce the

catchment area for schools intake. Splitting of classes demand employment of more teachers to handle the newly created classes and can be achieved in the long term.

7.3 Recommendations

However, the general view emerged from the study shows that teachers need organizational support at school and policy level for effective implementation LCE. As such, the study makes the following recommendations:

- The Ministry of Education Science and Technology (MoEST) should explore the opportunity of developing and mainstreaming team-teaching and co-facilitation in the schools. In this, adventure, teachers will work together from lesson planning to class delivery and evaluation. However, considering the shortage of teaching staff in the primary schools, teachers for a particular class streams would work as a group and share responsibilities for the class. In so doing, a there will be a team of teacher handling a standard or grade rather than a teacher being assigned to a particular class.

- The Ministry of Education should also consider employing teacher assistants who can be supporting servicing teachers with other class tasks. These teacher assistants should undergo orientation for the work and be deployed in schools. For sustainability of the programme, the Ministry of Education should consider paying the teacher assistants honorarium for the period they serve.

- The pre-service teacher education program should be aligned to respond to the practical situation in the schools. This calls for teacher education practice to expose student-teachers to large class environment right from the training. This solution contrasts the current practice that sees student-teachers offered specially created classes of less than 60 learners when the after training practice exposes them to a large class. Such a change in pre-service teacher training program would help prepare teacher with LCE methods appropriate to a large classes.

- Teachers should be specially trained and exposed to methods that promote active, inquiry-based and participatory learning in a special environment like a large class setting. For example, teachers should be trained in how to use group work, role-play and other methods in a large class to facilitate active and participatory learning

7.4 Further studies

The study makes the following recommendations for further research in implementation of LCE;

- The relationship between class size, teaching instruction and student performance. This study will help to make a strong assessment of the benefits of LCE against traditional pedagogy

- Investigation of the feasibility of implementing LCE in a normal class setting to help determine whether implementation is affected by quality of the teacher or size of the class.

CHAPTER EIGHT: REFERENCES

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APPENDICES

APPENDIX I: ETHICAL CLEARANCE AND APPROVAL

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

12 October 2017

Mr Jeremiah Mpaso 216076810
School of Built Environment and Development Studies
Howard College Campus

Dear Mr Mpaso

Protocol reference number: HSS/1781/017m
Project title: An investigation of Learner-Centered Education in a large class developing country setting: Evidence from Lilongwe, Malawi

Full Approval – Expedited Application

In response to your application received 21 September 2017, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted **FULL APPROVAL.**

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

.....

Dr Shenuka Singh (Chair)
Humanities & Social Sciences Research Ethics Committee

/pm

cc Supervisor: Dr Gerard Boyce
cc Academic Leader Research: Professor Oliver Mtapuri
cc. School Administrator: Ms Nolundi Mzolo

Humanities & Social Sciences Research Ethics Committee
Dr Shenuka Singh (Chair)
Westville Campus, Govan Mbeki Building
Postal Address: Private Bag X54001, Durban 4000
Telephone: +27 (0) 31 260 3587/8350/4557 **Facsimile:** +27 (0) 31 260 4609 **Email:** simbap@ukzn.ac.za / anymanm@ukzn.ac.za/ mohunp@ukzn.ac.za
Website: www.ukzn.ac.za

APPENDIX II: STUDY GUIDES

Interview Guide for teachers

1. What is your understanding of leaner centered education?

2. What are some of the examples of learner centered methods you frequently use?

   Probe: Which of the listed methods doe the teacher frequently use:
   What do you consider when choosing such methods?
   How does the size of class affect choice of a teaching method?

3. What challenges do you experience in using such methods in relation to the size of your class?

4. How does your teaching a large class achieve the following principles of learner-centered education

   a. Active and interesting learning

   b. Construction of knowledge

   c. Daily life connections

   d. Cooperative learning

   e. Reflective learning

   f. The teacher as a facilitator of learning

5. How do you address the challenges mentioned?

   Probe: refer to specific challenges the respondent mentioned

6. What should be done to ensure that learner centered education is practical in a large classroom

Interview Guide for Primary Education Advisors and the Inspector of Schools

1. What is your understanding of leaner centered education?

2. What is your evaluation of teacher's implementation of LCE in the schools within your zone in respect to the following principles:

    a. Active and interesting learning
    b. Construction of knowledge
    c. Daily life connections
    d. Cooperative learning
    e. Reflective learning
    f. The teacher as a facilitator of learning

3. What positive aspects of LCE have you observed as working in the context of a large class environment?

4. What challenges does the zone face in effective implementation of LCE in a large class environment?

5. What response programs are in place to support teachers effectively implement LCE in the large class environment?

6. What would you recommend to have in place in order to have an effective implementation of LCE in the schools?

LESSON OBSERVATION GUIDE-LEARNER CENTRED TEACHING AND LEARNING

Principle 1: Active, interesting learning

	Observation point	**Observation Remarks**
1.	Teachers talk less and pupils talk more	
2.	Most activities done by learners	
3.	Skills employed in the class activity	
4.	Availability of various teaching resources	
5.	Level of class participation	
6.	Intensity of tasks	

Principle 2: Construction of Knowledge

	Observation point	**Observation Remarks**
1.	Focus is on learning/teaching	
2.	Learner's motivation as driving force	
3.	Materials provided aim at discovering new concepts	
4.	Own ideas developed by learners	
5.	Pace at which learners work	
6.	Teachers guidance	

Principle 3: Daily life connections

	Observation point	**Observation Remarks**
1.	Learning build upon learner's already knowledge	
2.	Connection between daily life and learning	
3.	Lesson focus-examination/outcome centred	

Principle 4: Cooperative Learning

	Observation point	**Observation Remarks**
1.	Level of concepts learned in single class	
2.	Exchange of ideas between teachers and learners	
3.	Provoking learners' thinking	

Principle 5: Reflective Reading

	Observation point	**Observation Remarks**

1.	Teacher feedback	
2.	Learners engagement in summarizing activities under the guidance of the teacher	

Principle 6: Role of the Teacher

	Observation point	**Observation Remarks**
1.	Guiding and facilitating knowledge	
2.	Teacher material preparation	
3.	Teacher talks less than pupils	
4.	Setting a conducing learning environment	
5.	Knowledge on learners language problems	

Adapted from LCE Core training Manual as cited from MoEST/InWent: Active Learning in Primary Science, p.18. Lilongwe/Bonn, March 2009

APPENDIX III: INFORMED CONSENT FORM

UKZN HUMANITIES AND SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE (HSSREC)

APPLICATION FOR ETHICS APPROVAL

For research with human participants

INFORMED CONSENT RESOURCE
Researcher: Jeremiah Mpaso (216076810)

Note to researchers: Notwithstanding the need for scientific and legal accuracy, every effort should be made to produce a consent document that is as linguistically clear and simple as possible, without omitting important details as outlined below. Certified translated versions will be required once the original version is approved.

Information Sheet and Consent to Participate in Research

Date: _____

Dear respondent,

My name is Jeremiah Mpaso, a student in the School of Built and Environment Studies at Howard College University of KwaZulu-Natal, South Africa.

You are being invited to consider participating in a research on '**an investigation of LCE in a large class developing country setting: Evidence from Lilongwe, Malawi**
The aim of the study is explore teachers' experiences and challenges in using learner learner-centred methodologies in a large class. This looks at how theory learned at the training

college and through the In-service training matches with practice. The purpose of this study is to recommend for necessary LCE program response and curriculum development that is more effective and applicable to the real situation on the ground.

The study is will involve individual in-depth interviews with 10 teachers from 5 schools selected in each education zone, 5 Primary Education Advisors, within Lilongwe Urban District Education Management zone and 1 Inspector of Primary Schools located at Central West Education Division. Apart from individual interviews, the study will also conduct 5 lesson observations from the participating teachers.

The in-depth interviews will be conducted at your convenient time and venue and will last approximately 1 hour. The interviews will be audio recorded for easy transcription. Further to this, the study is not funded by any organization as such; the researcher will cover all costs relating to the study.

There is no risk or harm associated with your participation in this study and should you experience any discomfort during the course of interviewing, you have the right to refuse to respond to certain questions, to discontinue or to withdraw from the interview process.

I hope that your participation in this study may help in contributing to policy development and programs relevant in improving effective implementation of LCE in large class setting.

This study has been ethically reviewed and approved by the UKZN Humanities and Social Sciences Research Ethics Committee (**approval number HSS/1781/017m**).

Your participation in this study is voluntary and you may choose to withdraw from the study at any point without attracting any penalty or loss of treatment.
Your participation will not attract any cost and similarly no incentives for participating in the study are provided. The interview will be kept strictly confidential. Your identity will be protected and anonymity will be maintained throughout the interview. Audio recordings and transcribed materials will be kept safe by the researcher for use in my dissertation without reference to your identity unless with your written consent. After completion of the dissertation, audio recordings and transcripts will be kept with my supervisor and only destroyed after five years upon completion of the study and the awarding of the degree.

In the event of any problems or concerns/questions, you may contact the researcher at (+265 995 141 127/ +27631794686), the UKZN Humanities and Social Sciences Research Ethics Committee or the researcher's supervisor, contact details as follows:

HUMANITIES and SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

Research Office, Westville Campus
Govan Mbeki Building
Private Bag X 54001

Durban

4000

KwaZulu-Natal, SOUTH AFRICA

Tel: 27 31 2604557- Fax: 27 31 2604609

Email: HSSREC@ukzn.ac.za

My Supervisor

Dr. Gerard Boyce

School of Built Environment and Development Studies

University of KwaZulu-Natal, Howard College Campus,

Durban 4041,

Shepstone Building Level 7, Room A723, South Africa.

Tel: +27 31 260 1473

Email: Boyce@ukzn.ac.za

CONSENT

I _____have been informed about the study entitled:

An investigation of LCE in a large class developing country setting: Evidence from Lilongwe, Malawi by Jeremiah Mpaso (student No. 216076810)

I understand the purpose and procedures of the study

I have been given an opportunity to answer questions about the study and have had answered to my satisfaction.

I declare that my participation in this study is entirely voluntary and that I may withdraw at any time.

If I have any further questions/concerns or queries related to the study I understand that I may contact the researcher

Jeremiah Mpaso
School of Built Environment and Development Studies
University of KwaZulu-Natal, Howard College Campus,
Durban 4041,
South Africa.
Tel: +27 63 1794 686/+265 995 141 172
Email: mpasoj@yahoo.com

If I have any questions or concerns about my rights as a study participant, or if I am concerned about an aspect of the study or the researcher then I may contact his supervisor:

Dr. Gerard Boyce
School of Built Environment and Development Studies
University of KwaZulu-Natal, Howard College Campus,
Durban 4041,
Shepstone Building Level 7, Room A723
South Africa.
Tel: +27 31 260 1473
Email: Boyce@ukzn.ac.za

Or

HUMANITIES and SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

Research Office, Westville Campus
Govan Mbeki Building
Private Bag X 54001
Durban
4000
KwaZulu-Natal, SOUTH AFRICA

Tel: 27 31 2604557 - Fax: 27 31 2604609

Email: HSSREC@ukzn.ac.za

I hereby provide consent to:

Audio-record my interview YES / NO

_____ _____

Signature of Participant **Date**

_____ _____

Signature of Witness **Date**

(Where applicable)

Jeremiah Mpaso, School of Built Environment and Development Studies, University of KwaZulu-Natal, Howard campus, South Africa; +265 995 141 127/+2763 1794 686, mpasoj@yahoo.com

APPENDIX IV: GATEKEEPER'S LETTER

Telephone (265) 01 750 819

Communications should be addressed to:
District Education Manager

In reply please quote No.

District Education Manager
Lilongwe Urban District
P.O. Box 192
Lilongwe

23rd August, 2017.

To whom it may concern

PERMISSION TO CONDUCT ACADEMIC RESEARCH – MR JEREMIAH MPASO

I write to grant authority to Mr Jeremiah Mpaso who is pursuing Masters in Development Studies at the University of KwaZulu-Natal in the Republic of South Africa to conduct his academic research on Feasibility of Learner Centred Education (LCE) in a large classroom environment in Lilongwe Urban.

Your usual cooperation is appreciated.

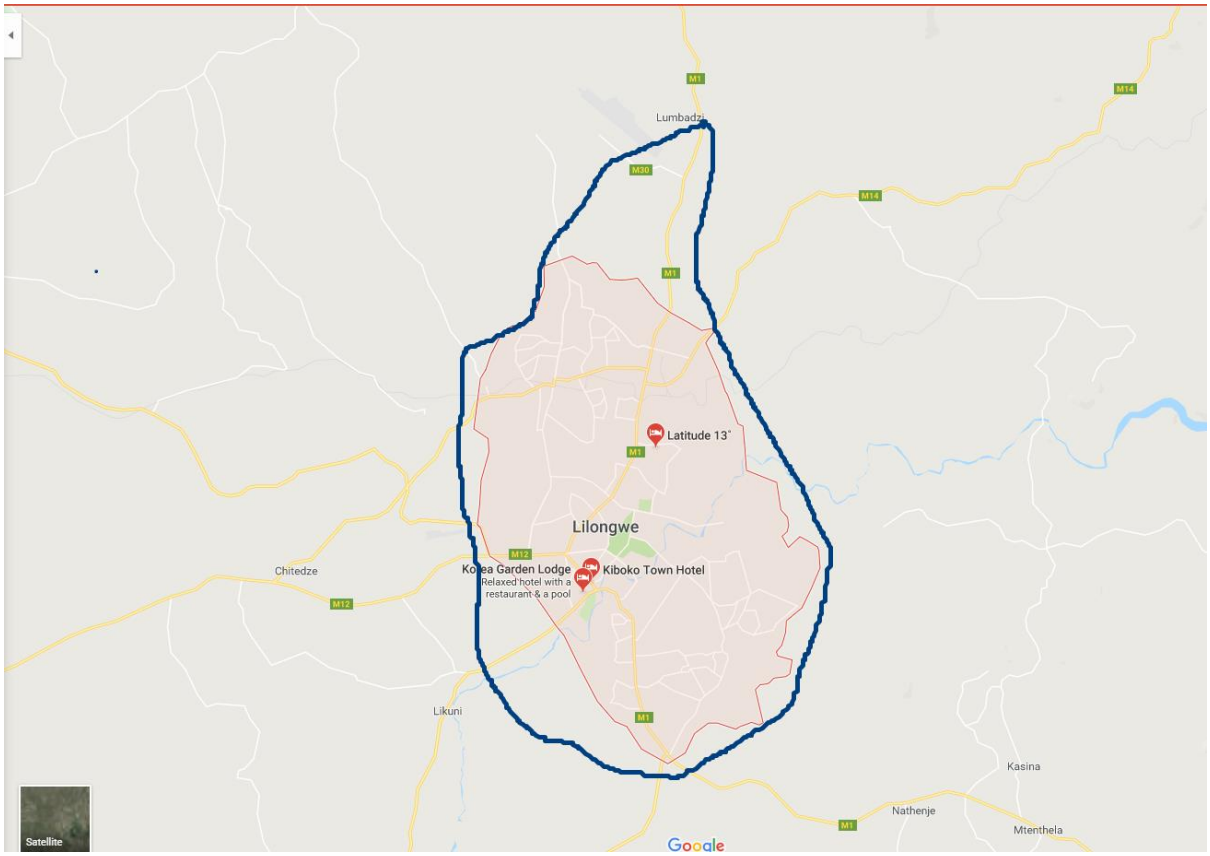
Sincerely,

THE DISTRICT EDUCATION MANAGER LILONGWE CITY 2017 P.O. BOX 192 LILONGWE

Dr. M. Sineta (Mrs).
DISTRICT EDUCATION MANAGER.

APPENDIX V: STUDY LOCATION

STUDY LOCATION: LILONGWE URBAN EDUCATION MANAGEMENT ZONE



City Boundary

Education District Boundary

Source: Google maps

APPENDIX